INSIDE: TOO MUCH LOVE FOR THE MADISON?

Montana Outdoors

MONTANA FISH, WILDLIFE & PARKS | $3.50

JULY–AUGUST 2016

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See more wildlife this summer from a canoe or kayak

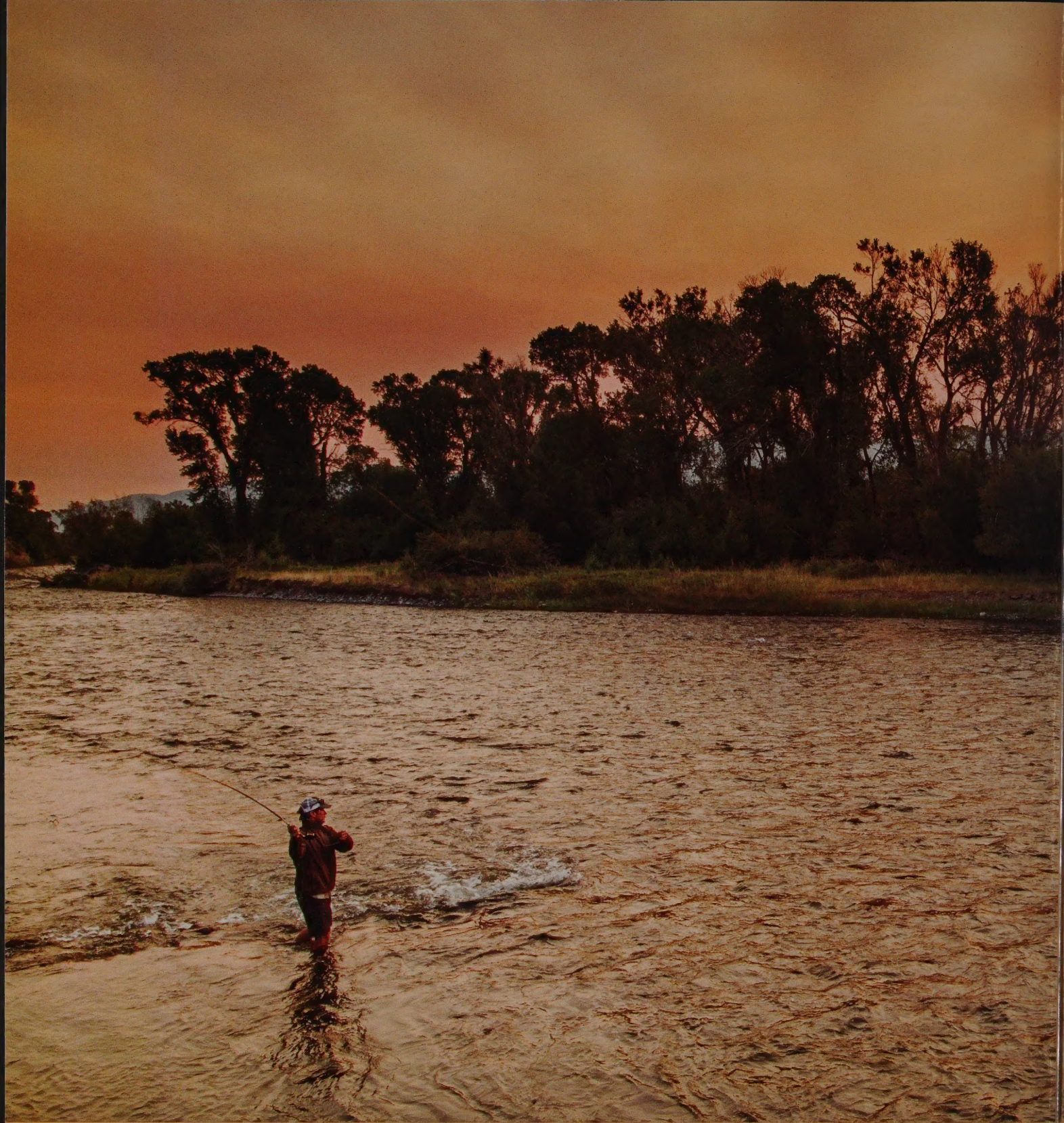
IN THIS ISSUE:

ADULT-ONSET FLY-FISHING

PRAIRIES IN THE MOUNTAINS?

HELP US FIND MORE BLACK SWIFTS

WHY OSPREYS AND BALING TWINE DON'T MIX



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Montana Outdoors

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A LONG HAUL
An angler casts at sunrise on the Madison River near Ennis. See page 16 to learn more about this legendary trout river and new efforts to manage its recreational use. Photo by Chuck Haney.

FRONT COVER
See page 34 for advice on sneaking close (but not too close) to moose, otters, songbirds, and other river-dwelling wildlife. Photo by Donald M. Jones.

Gift subscriptions make good neighbors

Just a note to tell you how much we have enjoyed *Montana Outdoors*. My neighbor signed us up for a gift subscription, which I am renewing today. We look forward to each issue.

Andy Pullen
Montrose, IL

Yeah for trillium

Thank you for such an informative article on trillium (Montana Outdoors Portrait, May-June, 2016). I was fascinated to learn of the complexity of this flower. Now when I am hiking and see trillium, I look at them in a totally different way.

Claudia Diefenderfer
Florence

Yummy recipes, great memories

Your Trout Meunière Amandine recipe (Eating the Outdoors, May-June) is delicious. Lacking trout, we used it with a nice filet of wild-caught Norwegian steelhead. The brown butter and parsley sauce with toasted almonds made the delicious fish even tastier. Thanks for sharing this winner. We will use it again and serve it to dinner guests.

We also recently made your recipe Crispy Pheasant Breasts in Gin Cream (September-October 2015), and it is sure a winner. We used chicken breasts due to lack of upland game species. The gin sauce is absolutely delicious, and the recipe will go into our permanent file.

I also enjoyed the article "Affable Authority" in that issue. It brought back some great memories. My dad ran a gunsmith shop in Great Falls back in the 1940s, '50s, and '60s, and one of his customers was the area game warden, Bob Donlin. Donlin was a really personable guy but very big of stature and exuded authority, just like the wardens in your article. In the 1980s and '90s my wife and I lived in the Flathead area. A female warden assigned to the Kalispell office was well known for her authoritative yet friendly nature. Game wardens are a special kind of people.

Harry Johnson
Redwood Falls, MN

Searching for a bugger

My wife and I love *Montana Outdoors*. Our neighbors moved to the Kalispell area several years ago and bought us a gift subscription to your magazine, and we have renewed it ever since. You have no idea how jealous we are of folks who live in your great state, with all there is to see and do in such pristine environments. We read every word of the magazine. Even though there are some problems with over-development in some parts of Montana, they are nothing like the problems that Pennsylvania has with houses and businesses being built on every inch of land available, ruining our streams, woods, and farms. You folks in Montana do an incredible job of preserving your rural lifestyles for generations to come.

> "You folks in Montana do an incredible job of preserving your rural lifestyles for generations to come."

The article by John Holt ("Chucking Big Buggers for Big Browns," May-June) was fabulous and hit home as well. He did an outstanding job of relaying the thrill of catching huge trout on buggers. Several years ago, I was fishing a local stream with a Woolly Bugger exactly like the

Chucking Big Buggers for Big Browns

It's not the most elegant fly-fishing technique. But it is the best way to catch trout the length of your arm. By John Holt

Palmer-hackled one shown in the photo on page 26. I caught a massive rainbow trout that was just one inch shy of the state record. Later that week, using the same bugger in the same stream, I hooked another monster rainbow, this one surely a state record. I got it to about ten feet from me and—you guessed it—the fish broke off, taking the fly with it. I have never been able to find another bugger exactly like that one. Please, can you ask Mr. Holt where I can find that exact Woolly Bugger pattern? There are big fish here waiting to devour one.

Barry Fenicle
New Cumberland, PA

JOHN HOLT REPLIES: I tie this pattern myself using a no. 4 through no. 8 3x to 4x long-shank hook. I make a dozen wraps of .035 wire toward the head, and use black thread, black marabou tail, and cree hackle wrapped forward over a brown chenille body, finishing with a black thread head and head dope. Good luck.

Ethical breach?

Regarding your article on late-season pheasant hunting, "A Fine Finish" (November-December, 2015): Did it occur to the author that those pheasants he flushed were huddled together for warmth in the only available shelter within a radius of miles? Once they were driven into the scouring winds, what were their fates? How did one man's winter hunting fiasco affect the pheasant population in that region the following year?

Martin Nedom
Sonora, CA

Kudos to Auchly

Thank you so much for including articles by Bruce Auchly in your magazine. He's always informative, creative, and often fun. As a writer myself, I appreciate a well-told tale.

Beverley Beckley
Corvallis, OR

Correction

The brown trout shown on page 27 of the May-June issue was not exhausted when landed, nor was it a spawning fish, as the caption indicated. Photographer Josh Bergan informs us that the trout was landed quickly, in April.

Write to us

We welcome your comments, questions, and letters. We'll edit letters as needed for accuracy, style, and length. Reach us at Montana Outdoors, P.O. Box 200701, Helena, MT 59620-0701. Or e-mail: tdickson@mt.gov.

Pan-Seared Venison Steaks with Caramelized Onions and Mushrooms

By Tom Dickson | Preparation time: 10 minutes | Cooking time: 45 minutes | Serves 4

HOLLY HEYSER

By midsummer my wife and I have devoured most of the venison in our freezer, but fortunately we still have a dozen or so packages labeled "steaks." There's only one problem: Steaks, while delicious, become a bit tiresome eaten week after week. That's where caramelized onions come in. They have a sweetness that elevates venison steak to a higher plane. Add sauteéd mushrooms for earthiness and a bitter green like arugula for balance and the dish is complete.

The recipe here is by Hank Shaw, author of the game cooking blog *Hunter Angler Gardener Cook*. He recommends hen-of-the-woods mushrooms, also known as maitake, found in some western Montana forests. Since they don't grow in the dry, flinty foothills where I live, I use fresh morels from the farmer's market or the oyster or even button mushrooms found in grocery stores.

For a bitter green to balance the caramelly onions, Shaw suggests adding freshly picked young dandelion greens. It's too late for those (April and May are the best months), so I suggest a few arugula leaves.

Serve with buttered boiled potatoes and corn on the cob.

—Tom Dickson is editor of *Montana Outdoors*.

INGREDIENTS

5 T. unsalted butter, divided

3 large yellow onions, peeled and sliced

Salt

1 t. dried thyme flakes

2 t. honey (optional)

1 lb. venison (elk, deer, or pronghorn) backstrap, preferably in one piece

½ lb. fresh mushrooms, sliced

3 T. fresh parsley, chopped

Dandelion leaves or arugula, for garnish (optional)

DIRECTIONS

Start by caramelizing the onions. Heat 2 T. of the butter in a large sauté pan over medium-high heat. When it's hot, add the onions and toss to coat. Cover the onions, turn the heat down, and cook slowly, stirring once in a while. After 10 minutes, they'll start to soften. Sprinkle salt over the onions and continue cooking. When they are just starting to brown, add the thyme and honey. Cook until they are a nice brown. Remove and set aside. The onions take about 20 minutes and can be made in advance.

When the onions are done, wipe out the pan and add 2 T. butter. Pat the venison dry with a paper towel and sear it over medium-high heat, turning to make sure all sides are well browned. For medium-rare steaks, cook a few minutes on each side, until a meat thermometer registers 140 degrees. Remove the meat from the pan and let rest for five minutes on a cutting board.

While the venison rests, put the mushrooms in the pan and turn the heat to high. Sear the mushrooms until they release their water (this might not happen with hen-of-the-woods). When the water has almost boiled away or when the mushrooms begin to darken, add the remaining 1 T. of butter and sauté until they are nicely browned. Salt them as they cook.

Once the mushrooms are ready, add the caramelized onions and the parsley and toss to combine. Heat through and divide among four plates. Add the dandelion leaves or arugula if you are using them. Slice the venison into medallions and serve immediately.

A Toast to the GYE Grizzly Recovery

Wildlife conservation is filled with roadblocks, setbacks, and delays. That's why we need to stop and celebrate when conservation puts one in the win column.

That's certainly the case with grizzly bears in the Greater Yellowstone Ecosystem (GYE). The recovery of that population is one of the greatest large carnivore success stories in North American history. When the grizzly bear was put under federal protection in 1975, the GYE population was just 150 bears. The federal recovery goal then was 400 bears, later increased to 500 bears to make sure the population would be healthy and viable before delisting. The population reached that goal in 2002, more than a decade ago. Today it's estimated at more than 700—a remarkable wildlife conservation achievement.

The U.S. Fish & Wildlife Service (USFWS) agrees. Recognizing that all recovery criteria had been met, this past March the agency proposed removing the grizzly bear in the GYE from the federal list of endangered and threatened wildlife. Montana Fish, Wildlife & Parks fully supports the delisting proposal.

> "Let's celebrate reaching this important grizzly bear recovery milestone.

Much of the press coverage since has focused on the possibility of grizzly bear hunting seasons. One reason hunting is in the spotlight is that the USFWS requires, before it decides to delist, that all three states in the GYE (Montana, Wyoming, and Idaho) outline the structure and framework of any possible hunting seasons. Reasonably, the USFWS wants to ensure the population stays viable after states take over management.

What the three states have shown with their outlines of proposed seasons is that if any hunting seasons took place, they would be extremely conservative and affect only a small percentage of the population. In Montana, we would set season dates to run when females are usually still in their dens, and we wouldn't allow hunters to shoot a grizzly with another bear, to prevent accidentally shooting a sow with cubs. We'd also make sure that hunting was conducted under fair-chase conditions.

Some years we might not even have a season. At the end of each year, officials from the three states would review total grizzly bear mortalities from vehicle collisions, natural causes, and removal due to killing livestock. If mortalities exceeded previously agreed-upon limits, no hunting would occur the next year in any state.

Another thing to remember: Before any hunting would even be considered, the grizzly first needs to be delisted, and even then there would still be opportunities for public comment on any hunting season proposals.

For proof that the GYE grizzly population would fare well under state control, look no further than our record with other large carnivores. Five years after Montana's wolf population was delisted in 2011, the population is at least 536. That's five times greater than the federal recovery goal, even with managed hunting and trapping. Similarly, our mountain lion population, managed with regulated hunting, is robust, with more than 5,000 of the big cats. Hunting hardly dents our healthy population of roughly 13,000 black bears.

The goal of the Endangered Species Act (ESA) is to recover threatened and endangered species and then, with adequate monitoring and safeguards in place, turn management over to the states. The ESA wasn't created to permanently keep species under federal control. Doing so when a population has far exceeded recovery goals undermines public support for this essential wildlife conservation legislation. If grizzly delisting is blocked by lawsuits, writes outdoors author and TV host Steven Rinella in a recent editorial in *The New York Times*, "the credibility of the Endangered Species Act will continue to erode."

The GYE grizzly population has been recovered for years. Protections that got it there won't go away. Montana, Wyoming, and Idaho will continue monitoring GYE bear distribution and mortalities, females with cubs, and genetic variation. What's more, if the population ever were to drop below the recovery goal, the grizzly could be put back on the list of federally threatened species.

The numbers are there. Safeguards are in place. It's time to delist.

Those of us who care about grizzly populations should continue discussing the bear's biology, ecology, and management. Let's keep talking about how best to ensure the species' future—including the Northern Continental Divide Ecosystem and Cabinet-Yaak populations, which we are trying to recover and also delist. But at this important moment in the grizzly's history, we should pause and celebrate reaching an important recovery milestone. Let's give a toast both to the people who've helped recover the GYE population—including grizzly advocates and the many ranchers who tolerate grizzlies on their land—and to the great bear itself.

—**M. Jeff Hagener**, Montana Fish, Wildlife & Parks Director

DAVID R. ARMER

ERIK PETERSEN

RIVER RESOURCE

ANDREW PULS
River Ranger, Bozeman

I think I have the best job in FWP, no doubt about it. I spend most of the spring, summer, and fall patrolling the Madison, Big Hole, and Beaverhead Rivers. My main job is to monitor outfitter compliance with the commercial rules and restrictions on these three permitted rivers. Most of my patrols are done by truck at FWP fishing access sites, but sometimes I float in a raft or kayak, usually when I hear of a downed tree or other hazard that the public might need to know about.

While I generally don't check fishing licenses outside of commercial fishing trips, I do answer a lot of questions from the public on everything from fishing and river conditions to camping locations. I also collect camp fees and perform routine maintenance at fishing access sites and help game wardens and other FWP personnel with their projects.

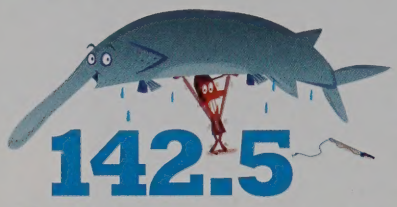
During the winter, I'm in the office, compiling river-use data from outfitter commercial-use reports. I also process many of the nearly 300 applications we receive each year from outfitters who want to operate commercially on the Madison, Big Hole, and Beaverhead. It might sound crazy, but after a long season of patrolling, I actually enjoy my time behind the desk.

I see my role in FWP as monitoring outfitter use and providing help and information to the general public on these high-use rivers. I don't enforce rules and regulations—wardens do that—but I do feel that my presence goes a long way in making sure that things are as safe, fair, and legal as possible on these rivers. My ultimate goal is to be a resource for the public, outfitters, and other FWP employees. For a guy who loves rivers and fly-fishing, a job like mine is pretty tough to beat.

Bozeman photographer **PAT CLAYTON** heard that brown trout lived in Rosebud Creek, a tributary of the Stillwater River about 25 miles northwest of Red Lodge. So he hiked in last summer with a 70-pound pack containing a dry suit, camera, camping gear, and food. "It's rare to find browns in that type of high-mountain environment, so I thought I might get a unique image," Clayton says. To capture this shot of two 12-inch browns in a plunge pool, the photographer spent three days snorkeling along the creek. "I probably took 5,000 photographs to get this one shot," he says. "My camera has an underwater housing that allows me to take a single image of both above and below water. What I like about this particular image are the oxygen-rich bubbles from the fast riffles that contrast with the dry mountains in the background, and then the clarity and color of the bottom gravel—not to mention the trout themselves. I shoot underwater shots like this all summer, and I end up with maybe 20 to 30 decent photos. It's hard work." ■

PATRICK CLAYTON/ENGBRETSON UNDERWATER PHOTOGRAPHY

OUTDOORS REPORT



142.5

Weight in pounds of Montana's largest sport-captured fish, a paddlefish snagged on the lower Missouri River in 1973.

Celebrate Montana's open lands

Looking for something fun and outdoorsy to do this summer?

July 2016 is Montana Open Land Month, and participating organizations are holding events statewide throughout the month. Events include the Gallatin Valley Land Trust youth nature discovery walks (several days in July), Montana Governor's Cup Walleye Tournament at Fort Peck Reservoir (July 7–9), Madison Run-Bike Duathlon (July 10), North Shore of Flathead Lake Boat Tour (July 14), Trust for Public Lands Haskill Basin celebration (July 16), Montana Bicycle Celebration (July 15–17), and more.

"Close your eyes, imagine the word 'Montana,' and visualize an image," says Ron Marcoux, of Helena, a longtime Montana conservationist and inductee into the Montana Outdoor Hall of Fame. "The image in your mind is almost certainly inspired by open land. Open land defines Montana and who we are as Montanans."

Learn more at **openlandmt.org**.

Recreating in Montana's open landscape

BIRD HAZARDS

Monofilament line: for catching fish, not birds

Earlier this year, University of Montana biology professor Erick Greene spotted a dead great horned owl tangled in a tree over Silver's Lagoon, a kids' fishing pond in Missoula. The raptor had become entrapped in discarded fishing line and drowned. "I waded out, cut it down, and collected several hundred yards of line that had been tangled in that tree over the years," Greene says.

Unlike baling twine, which seems to affect only ospreys (see page 13), monofilament line entangles dozens of bird species that spend time along waterways where people fish. Greene and his students, FWP crews, and Montana Audubon volunteers have found dead or injured shorebirds, white pelicans, gulls, bald eagles, ospreys, loons, great blue herons, tundra swans, and most duck species with line wrapped around their neck or legs. The birds pick up line as nesting material, get caught in it as they walk along shorelines, or become snared when eating a fish that has broken free from an angler but still has a fishhook and line attached. The birds die by strangulation or of starvation. "To make matters worse, monofilament doesn't biodegrade," says Greene. "It will be in the environment causing problems for hundreds or even thousands of years."

Lauri Hanauska-Brown, chief of FWP's Nongame Wildlife Management Bureau, notes that most anglers pick up loose or extra fishing line and discard it properly. "But still too many anglers don't understand how dangerous this stuff can be to birds and end up leaving it along shorelines," she says.

Hanauska-Brown points out that anglers act as bird conservationists whenever they pick up loose fishing line. "Throw it in the trash when you get home. There's a good chance you'll be saving the lives of some birds," she says. ■

WILDLIFE ISSUES

Bison now America's official mammal

In May, President Barack Obama signed the National Bison Legacy Act, designating the American bison, also known as the buffalo, as the official mammal of the United States. The legislation passed the House and Senate earlier in the year with strong bipartisan support.

The bison's designation as "national mammal" is entirely symbolic—the animals won't receive any new protection under the law. But supporters believe the new designation could boost efforts to reintroduce them into the wild. The legislation also does not affect the status of the bald eagle, which remains America's national "animal."

Millions of bison once roamed North America from Alaska to the Appalachian Mountains. But by the late 1800s, only a few hundred bison remained in the United States. Weighing up to a ton, bison had been slaughtered for their meat and hides, and as part of a U.S. military strategy to weaken Indian resistance.

Thanks to a few private individuals working with tribes, states, and the U.S. Department of Interior, the bison avoided extinction. Today roughly 300,000 bison live in North America. Most are held as commercial livestock, but an estimated 20,000 exist in "conservation herds" across the American West, including roughly 5,000 in Yellowstone National Park and about 350 on the National Bison Range near Moiese, north of Missoula. ■

CLOCKWISE FROM TOP LEFT: CARTOON ILLUSTRATION BY MIKE MORAN; LISA BAY; *NATIONAL GEOGRAPHIC*; SHUTTERSTOCK; SHUTTERSTOCK; SHUTTERSTOCK

FISHING TECHNIQUE

Doing it the Spey way

Wading fly-anglers across Montana are discovering a better way to cast farther, more efficiently, and with better line control. "Spey casting has the look of a turbo-charged roll cast using a 10- to 12-foot rod," says Keith Balfourd, who teaches the technique in the Missoula area.

Spey casting is nearly impossible to accurately describe to a beginner in words (YouTube instructional videos are very popular). Basically it involves using two hands on the rod handle—one about a foot ahead of the reel and one behind. The caster sweeps the line back along the water surface, uses line tension on the water surface to energize or "load" the rod, then punches forward with the top hand to fling the line forward.

"Spey casting has the look of a turbo-charged roll cast."

Like we said, you need to see it.

Spey casting was developed more than a century ago on Scotland's Spey River, the banks of which are lined with shrubs and trees. Salmon anglers devised a way to cast their fly line in places with no room for a traditional backcast.

In addition to allowing anglers to fish with their backs against steep or highly vegetated banks, Spey casting puts a fly over trout otherwise inaccessible to wading anglers because of fast current or deep water.

Though Spey casting can be done with a traditional one-handed rod, most practitioners use longer two-handed rods.

The Spey technique is used mainly for the traditional "wet fly swing" method of fishing a streamer or soft-hackle fly. Anglers generally fish downstream and across, letting the current "swim" the fly back across the channel to below the angler.

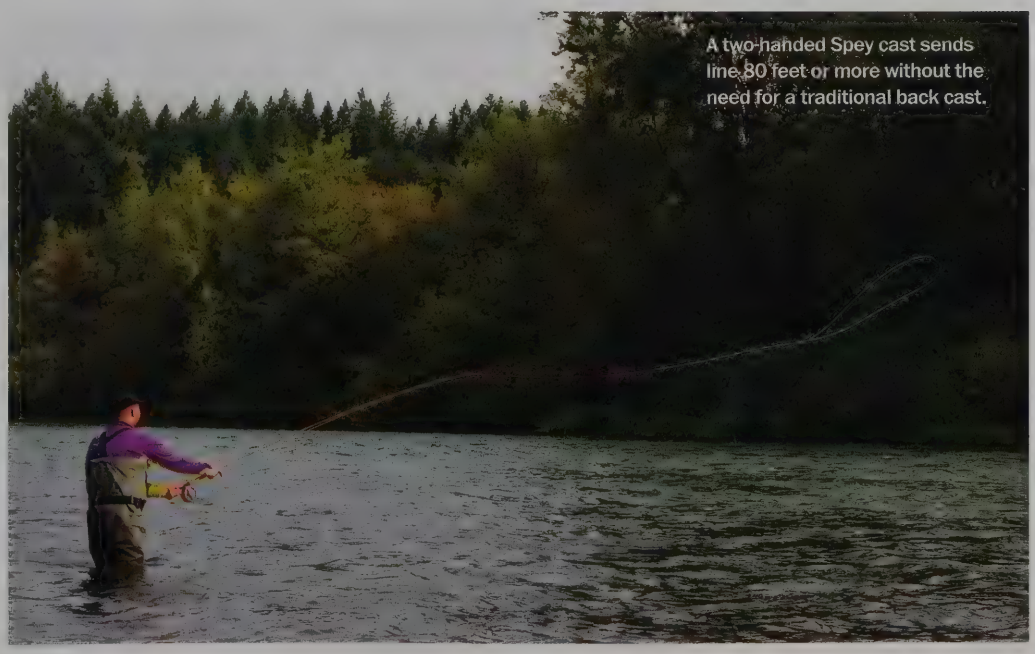
Spey casting is rarely used for fishing tiny dry flies, but the technique works well for fishing a hopper or other large dry, or a nymph below a strike indicator.

Spey fly lines come in a mind-boggling assortment of weights and configurations. Most are shooting head or weight-forward versions, and leaders are generally four feet of untapered stiff monofilament. To make matters more complicated, three types of Spey technique exist: traditional, Scandinavian, and Skagit.

"Spey rods are hugely popular among steelheaders and salmon anglers, anywhere you need to blind cast to cover big water with heavy sink tips and weighted flies," says Balfourd. "You'll find people Spey casting from Alaska and British Columbia down through Oregon, Washington, and Idaho, and increasingly on many intermountain West and midwestern rivers."

In Montana, anglers have been spotted using the Spey technique on the Yellowstone, Bighorn, Clark Fork, Flathead, Missouri, and other big rivers.

Learn more about Spey casting, rods, and lines at montanaspey.com, troutfitters.com, head huntersflyshop.com, and bigforkanglers.com. ■



A two-handed Spey cast sends line 80 feet or more without the need for a traditional back cast.

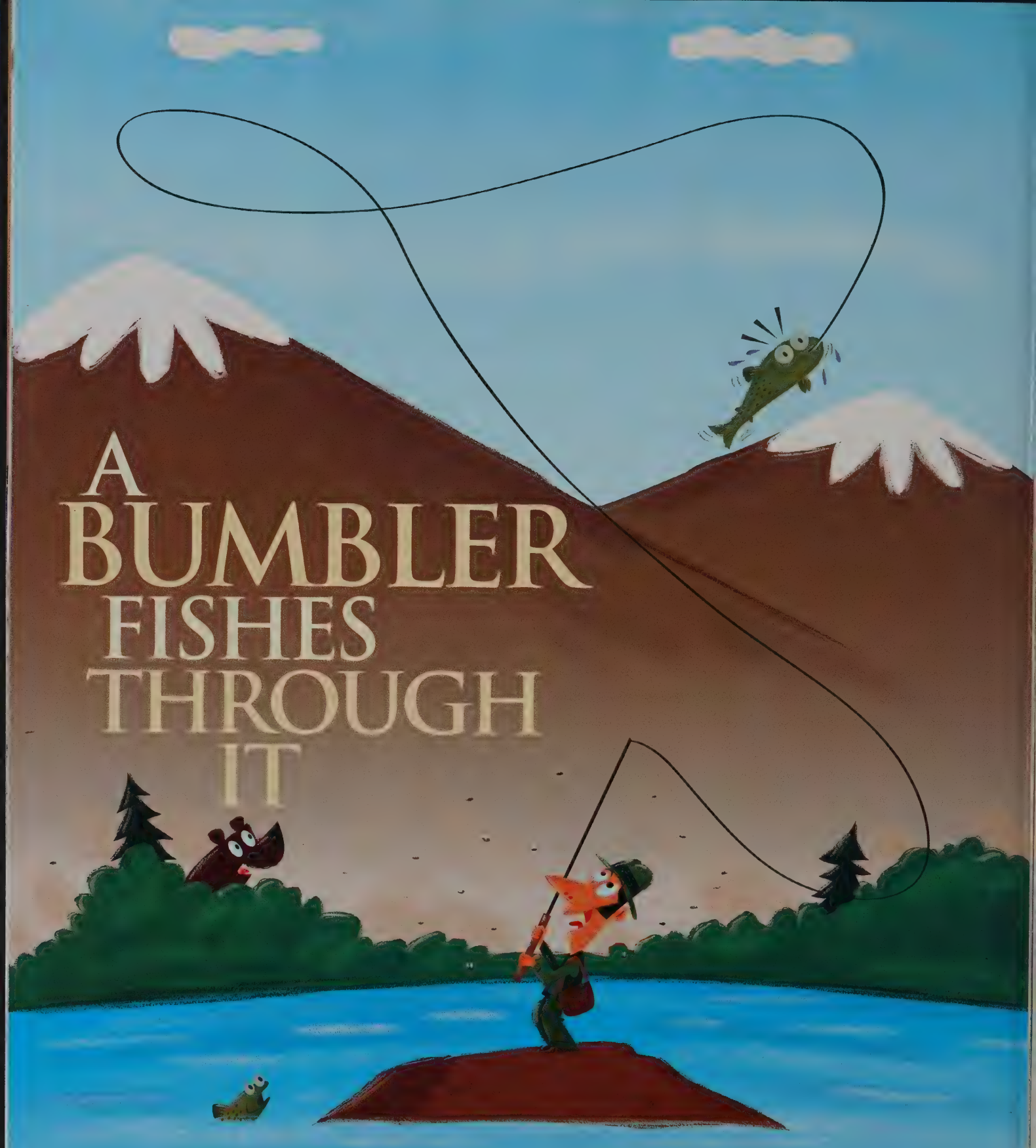
Nat Geo goes whole hog on YNP

National Geographic devoted its entire May 2016 issue to Yellowstone National Park. It was the first time in the magazine's 128-year history that it focused on a single geographic entity for an entire issue. "Yellowstone: The Battle for the American West," takes an in-depth look at the Greater Yellowstone Ecosystem, which encompasses Yellowstone and Grand Teton National Parks, national forests, wildlife refuges, and private lands totaling more than 22 million acres. It's the largest collection of contiguous wild lands in the lower 48 states.

The issue also includes stunning photography from the park's present and past. The 170-page issue quickly sold out on newsstands nationwide. Copies are now selling on eBay for $20 or more.

Principal author of the issue was three-time National Magazine Award winner David Quammen, of Bozeman, author of a dozen works of science-based fiction, nonfiction, and essays.

"Yellowstone is more than just a park," Quammen writes in the issue. "It's a place where, more than 140 years ago, people began to negotiate a peace treaty with the wild. That negotiation continues today, with growing urgency, at Yellowstone and all over the planet, as the human world expands and the natural world retreats. Can we come to terms?" ■



A BUMBLER FISHES THROUGH IT

I was no Brad Pitt, but I decided I had to learn how to catch a trout with a fly. By Ben Long. Illustrations by Mike Moran

I admit it. Fly-fishing was not my thing.

I'd lived in Montana for nearly 30 years, all within minutes of several rivers that made the state famous.

But fly-fishing—dry, wet, or just damp around the edges—never stirred my drink. It's kind of embarrassing. I mean, being a Montana outdoor writer and not fly-fishing is like hailing from Texas and not barbecuing, or being a New Yorker who doesn't know how to hail a taxi.

Oh, I *knew* about fly-fishing all right. I grew up reading fishing writers like Norman Maclean, Ed Zern, and Roderick L. Haig-Brown, fly casters all. I took my future wife on our first date to see *A River Runs Through It* on opening night, back when the movie theater was downtown and had only one screen. You might think I was ripe for fly-fishing, but you would be wrong.

Frankly, I was intimidated by the whole business: the fly anglers with their polarized sunglasses that cost more than my first car, the array of waders for every temperament and temperature of water body found on Earth. (My idea of waders is last year's sneakers and cut-off jeans.)

Then there's the fly-fishing gear. When I step into a fly shop, I feel like I don't know the secret handshake. The shelves display enough imitation insects on hooks—in mysterious variations like pupae, larvae, dun, and spinner—to warrant returning to school for a PhD in entomology. And the rods! Fly rods must have the highest ratio of price-to-mass of any item ever traded in a human economy. They come matched with reels containing mechanisms so precise you'd think they were made by the Swiss to be worn on your wrist.

What intimidated me more than anything else were the knots. During my Eagle Scout training, earning my knot-tying merit badge was as great a challenge as passing calculus in college. I have two good knots from that experience: the square knot and the super-granny. I use them both equally.

But fly-fishing appears to require knowledge of dozens of different knots: the nail knot, the surgeon's knot, the blood knot, the clinch knot, the improved clinch knot, and the Palomar loop, for starters. To make matters worse, serious fly casters actually fish in the winter, too. In the frigid weather they have to take their gloves off to tie those knots. Or they wear fingerless gloves (like, what's the point?). If I did that, I'm pretty sure my fingers would freeze up so I couldn't type for a month and would go broke.

Yet fly anglers insist that their way of fishing has no equal. I remember my first float down the Smith River, several decades ago. My outdoor compatriot Sylvester was fly-fishing, while I used my trusty spinning gear. It was the Smith, so we both caught trout.

"You know what?" Sylvester said that evening at the campsite. "*Not* catching fish with fly gear is actually more fun than *catching* fish with spinning gear." I didn't believe him. Because isn't catching fish the whole point?

Later, he actually gave me one of his extra fly-fishing outfits. I tried it a few times and usually ended up tossing it in the back of the truck after a few minutes of frustration, the backing twirled around my ankles and flies stuck in the tops of an alder somewhere.

All that line! All those knots! All those blasted bugs I was supposed to know something about! Just give me a Rooster Tail spinner and let me be.

After a while, though, my failure as a fly angler started to get to me. At that point, I was raising a boy in Montana. What kind of Montana father didn't fly-fish? What kind of example was I?

Then, a few years ago, I had a revelation. The revelation came from Japan. Its name is tenkara.

Some say tenkara is Japanese for "fly-fishing for idiots." Others translate it as "latest fad to hook gullible Americans into buying yet another type of rod."

Not really. Tenkara actually translates to something like "floating down from above." It's an ancient form of fishing that evolved on Japan's mountain trout streams. Tenkara is fly-fishing made simple. It's minimalist fly-fishing.

There is no reel. The 12-foot rod is long and nimble and telescopes into the handle. The woven, tapered line ties to the rod tip and is short, only the length of the rod. To the end of the line you simply tie on the tippet—a hair-thin piece of clear monofilament line—and then the fly. That's all.

Finally, a fly rod I could wrap my simple brain around. What really delighted me was that my entire fishing kit weighed just a few ounces. Because I like hiking as much as fishing, this was a big selling point.

With this lithe little weapon in hand, I could see myself catching a fish. Not a lunker, but a fish. I rose to the tenkara bait and swallowed. *Ka-ching* sang the cash register.

I bought a selection of several flies: a Royal Coachman, because the famous *Field & Stream* humorist Ed Zern always wrote about them; an Elk Hair Caddis, because I like elk; and a Woolly Bugger, because what other sport can you turn to someone and, with a straight face, say "I'm going to tie on a Woolly Bugger"? I also bought some nymphs, because I had been told that when you don't see any flying bugs, it's time to fish with nymphs. Beyond that, I had no clear idea what a nymph actually was, especially since it was both a verb and noun. A person actually nymphs with a nymph.

I picked medium-sized flies because I wasn't after big fish, and because I couldn't see the little eye of the small flies well enough to tie on the tippet, even after I cleaned my glasses.

Things were starting to add up: simple angler, simple tackle. All I needed was simple prey. Happily, those were at hand in the

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Adult-onset fly-fisherman Ben Long lives in Kalispell. Mike Moran is a New Jersey–based artist and children's book illustrator.

form of westslope cutthroat trout.

All trout have reputations. Brookies are known for their beauty and table fare. Rainbows are renowned for their acrobatics. Brown trout are famous for their finicky palates and, in spite of having a brain the size of a BB, superhuman critical thinking skills.

Then there are westslope cutthroat trout. Montana's state fish. The fish that Silas Goodrich, dedicated fish catcher of the Lewis and Clark Expedition, hauled in from the spray at the foot of the Great Falls of the Missouri back in 1805 and thus introduced to the world a new species of trout.

Westslope cutthroat are known for their spotted, orange-throated beauty and for requiring the coldest and cleanest water. They are also about the easiest trout in the world to catch.

This is not because they are stupid. It's just that they evolved in relatively sterile water where food is naturally scarce. Cutthroat learned to eat first and ask questions later. Their credo—"Never pass up a free meal"—has helped them survive since the ice age. Only nowadays sometimes that "meal" turns out to be a wad of thread and feathers with a hook in it.

Their eagerness to bite a fly also makes cutthroat, hands down, the favorite game fish of novice (read: bumbling) anglers like myself. Luckily, I live in northwestern Montana, the epicenter of the world for westslope cutthroat trout.

So I had plenty of places to try my luck. Sylvester suggested we backpack into one of his favorite lakes in the Whitefish Range. It doesn't have a trail to it, and a mile or so of bushwhacking through grizzly country tends to weed out the competition and leave more fish for us.

"Sounds perfect," I said, thinking the remoteness of the lake would also make it less likely anyone else would be there to witness my casting ineptitude.

The first weekend in July that we both had free, the two of us set out. We arrived at the lake a bit bedraggled from the hike, hung our food bag from a tree, and proceeded to fish.

Sylvester decided to fish the lake itself. I was drawn to the outlet stream, which tumbled as rapids for a few hundred feet out of the lake before meandering through a lush meadow. The stream was about the width of a city sidewalk, the water crystal clear and without any pesky bushes along the banks to snag my casts.

As I had read in trout fishing books, I approached the water with as much stealth as I could muster, as if stalking some shy beast. I squinted at the bugs on the surface and—lo!—saw fish in the shallows.

Prey in sight, I extended my long, slender tenkara rod from the handle, tied to the tippet my smallest fly with my best super-granny knot, and sort of flung the tiny piece of fluff onto the water. The little trout scattered like my fly was some kind of osprey zooming in for the kill.

But I kept at it. My casts got better, some perhaps even halfway respectable. Trout grew curious at my presentation. Some even rose to the fly, and a few made half-hearted strikes.

I found myself lost in that wonderful predatory zone when you are entirely enveloped in the pursuit. It's akin to following fresh elk tracks in perfect snow. You know you are in the right place at the right time. Just...one...more...cast.

But, no. Nothing. The sun dipped behind the mountains and both the air and the fishing grew colder. I had evidently spooked every fish in the stream.

I trudged back to camp, disappointed I had not caught a fish. But then I thought about Sylvester's statement from the Smith River, 20 years before. I really did have more fun not catching fish on a fly than I might have had otherwise with my standard spinning gear. And since I brought enough food for dinner, I was content with the lesson.

Sylvester was still casting away, halfway across the lake. I rummaged through my pack, getting ready to pitch the tent and assemble the cookstove.

Then I saw them. Out on the lake. Telltale dimples from rising trout. Holy smokes. The bite was on!

I grabbed my rod and climbed onto a rock along the shore. The rises were beyond reach of the rod, even if I had been an expert caster. So I waited.

In one of those rare blessings of the outdoor world, the school of feeding trout gradually moved toward me, until the fish were just offshore. I could not tell what they were feeding on, but I flipped my fly into the middle of the dimples.

Immediately, unbelievably, the fly disappeared and the line went taut. I swear I could hear the "slurp" as the trout took.

"Fish on!" I said to myself. "Tip up! Tip up!"—remembering advice I'd read in a book somewhere for when you hook a trout.

I stood on the bank, rod tip up, as the lithe rod danced and the fish did what cutthroat trout do—rush toward the bottom of the lake with a strong run. It was a good fish, a living slab of electricity and silver.

Now what? I thought. The simplicity of tenkara fishing—no reel—turned out to be a challenge for the angler who actually catches a fish and needs to bring it in.

So I landed the fish exactly the same way I landed my first fish out of a farm pond, caught on a bobber and a worm, when I was a boy. I reefed back on the rod and flipped the fish out of the water and onto the bank. Then I pounced on it and hit it on the head with a rock.

A trout! A beautiful trout! And on a dry fly no less. It wasn't one of Roderick L. Haig-Brown's steelhead, and my style wasn't as pretty as Brad Pitt's Hollywood casting, but it was fish enough for me.

I tried to catch more, but the magic of the bite had evaporated as suddenly as it had begun. Still, I had my fish, and Sylvester returned to camp with a matching dandy of his own.

As the summer evening faded, we stripped a dead fir of limbs and got a little fire going. We cooked the fish in aluminum foil and boiled up some instant rice. We picked the bones clean and flung them into the deep of the lake so as not to attract bears.

I slept under the glowing Milky Way, belly full and soul happy, and dreamed the dreams of a fly fisherman.

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DEADLY DECORATION

When ospreys line their nests with baling twine, the results can be grim. By Alyse Backus

IF YOU'VE EVER SEEN an osprey nest perched atop a telephone pole, you've likely also seen orange strings dangling from the twigs and sticks. That's baling twine. Ospreys gather it, along with other soft materials such as grass and moss, to line their nests. But unlike natural materials, baling twine does not decompose. And the polypropylene string is so strong that when ospreys become entangled they can't break free.

Erick Greene, a biology professor at the University of Montana who monitors ospreys in several northwestern states, says that no other raptor favors baling twine as much as ospreys do. "They seem to have a really weird addiction to it, and we don't know why," he says. "I've seen a bald eagle nest right next to a red-tailed hawk nest right next to an osprey nest, and the osprey nest is the only one with baling twine."

CRIPPLED Baling twine can wrap around an osprey's foot, severely hampering the raptor's ability to catch fish for food.

Greene can only speculate why ospreys seek out the orange string. "In other ecosystems, ospreys use brightly colored lichens to line their nests, so maybe they're attracted to baling twine because its color is similar to lichens," he says.

Ospreys gather remarkable amounts of the bright twine, which is used to tie up hay bales fed to cattle or employed for erosion control in road construction. In 2010, volunteers with the Raptor View Research Institute in Missoula found a 20-year-old nest blown down in a storm containing more than 1,000 feet of baling twine. Greene says one blown-down nest he dissected contained nearly a half mile of discarded twine.

When ospreys pick twine up from fields or farm yards, the material tangles easily in

TOP TO BOTTOM: JOHN WARNER; RAPTOR VIEW RESEARCH INSTITUTE / JESSE LEE VARNADO

the birds' sharp, deeply curved talons. Birds caught in twine can starve to death, strangle, or suffer debilitating injuries to their feet and wings. Based on a study done in Alberta, Greene estimates that between 5 to 10 percent of osprey chicks and adults in Montana die from baling twine entanglement.

In addition, elk, deer, and other wildlife can become ensnared in loose twine, and curious cattle have been known to eat the material and die after it accumulates in the animals' rumen.

Kate Davis, executive director at the Raptors of the Rockies conservation and rehabilitation center in the Bitterroot Valley, has rescued several entangled ospreys. One had twine tightly wound around a foot that caused a deformity as the bird grew. "We had to euthanize it because there was no way it could survive with just one functional leg," she says.

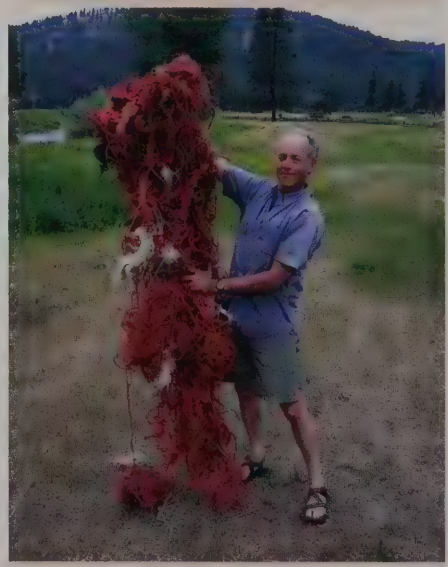
Without human intervention, an entangled osprey's chances of surviving are slim. "Getting wrapped up in baling twine or hanging upside down from the nest can be a death sentence," says Davis.

Osprey advocates across Montana are raising awareness of the twine problem. The University of Montana and the Missoula-based Raptor View Research Institute have produced a brochure on ospreys and baling twine and distributed it to landowners and school groups.

Sometimes a tangled osprey gets lucky when an angler or bird watcher notices it hanging from a nest and makes a life-saving call. Greene says linemen from the Missoula Electric Cooperative and NorthWestern Energy use their bucket trucks to retrieve tangled birds and trim loose baling twine from osprey nests to prevent future entanglements. "We have the necessary permits from Montana Fish, Wildlife & Parks and the U.S. Fish & Wildlife Service to do rescues and approach osprey nests. But we don't have the authority or equipment to approach live power lines," says Greene, who founded the Montana Osprey Project to study osprey ecology in the upper Clark Fork River watershed. "We have a great relationship with the electric companies when it comes to rescues and trimming baling twine from nests." He adds that NorthWestern Energy recently included information on ospreys and baling twine with customers' energy bills.

STRUNG UP Entangled in baling twine, a dead osprey hangs from its nest.

> "Getting wrapped up in baling twine or hanging upside down from the nest can be a death sentence."



DEADLY DETRITUS University of Montana professor Erick Greene with an estimated half mile of discarded baling twine he found in one blown-down osprey nest.

Greene has begun talking to other utility companies to see if he can create partnerships similar to those in Missoula. "Ospreys like to nest near or on power poles, and, if tangled, the birds can cause shorts in circuits that can lead to fires or other damage," he says. "So the cooperation is beneficial to both parties."

The most obvious way to save ospreys from baling twine is to eliminate the source. Some Audubon chapter members pick up baling twine along roadsides and encourage landowners to put loose twine in lidded garbage cans or 45-gallon drums where ospreys can't reach it. "We're trying to talk with as many people as possible about the dangers of baling twine to ospreys," says Lisa Bessasparis, a volunteer with the Yellowstone Valley Audubon Society and leader of the group's Baling Twine Committee. "Some people just don't realize that when they toss it on the ground or into the back of a truck it can end up in an osprey nest."

Greene works with 4-H clubs and Future Farmers of America members who volunteer to clean up twine on ranches. "It's something tangible kids can do, and they often contact their neighbors or relatives to see if they can do a cleanup," he says.

One challenge is disposing of the excess material. When burned, the petrochemical-based twine emits toxic fumes. Greene says a few communities in Idaho have begun working with ranchers on a baling twine recycling program. Conservationists in the Bitterroot Valley and elsewhere in Montana are trying to figure out if a recycling effort could work here.

Greene says most ranchers pick up excess twine, but sometimes the material blows loose in windy weather. "It only takes one or two messy fields to create a problem," he says. "Ospreys love the stuff, and they will make long trips to get it. Our goal is to make sure they can't find any loose twine anywhere in Montana."

If you see an osprey tangled in baling twine, call your local FWP office. To learn more about Project Osprey, visit projectosprey@mso.umt.edu.

Alyse Backus is a writer in Billings.

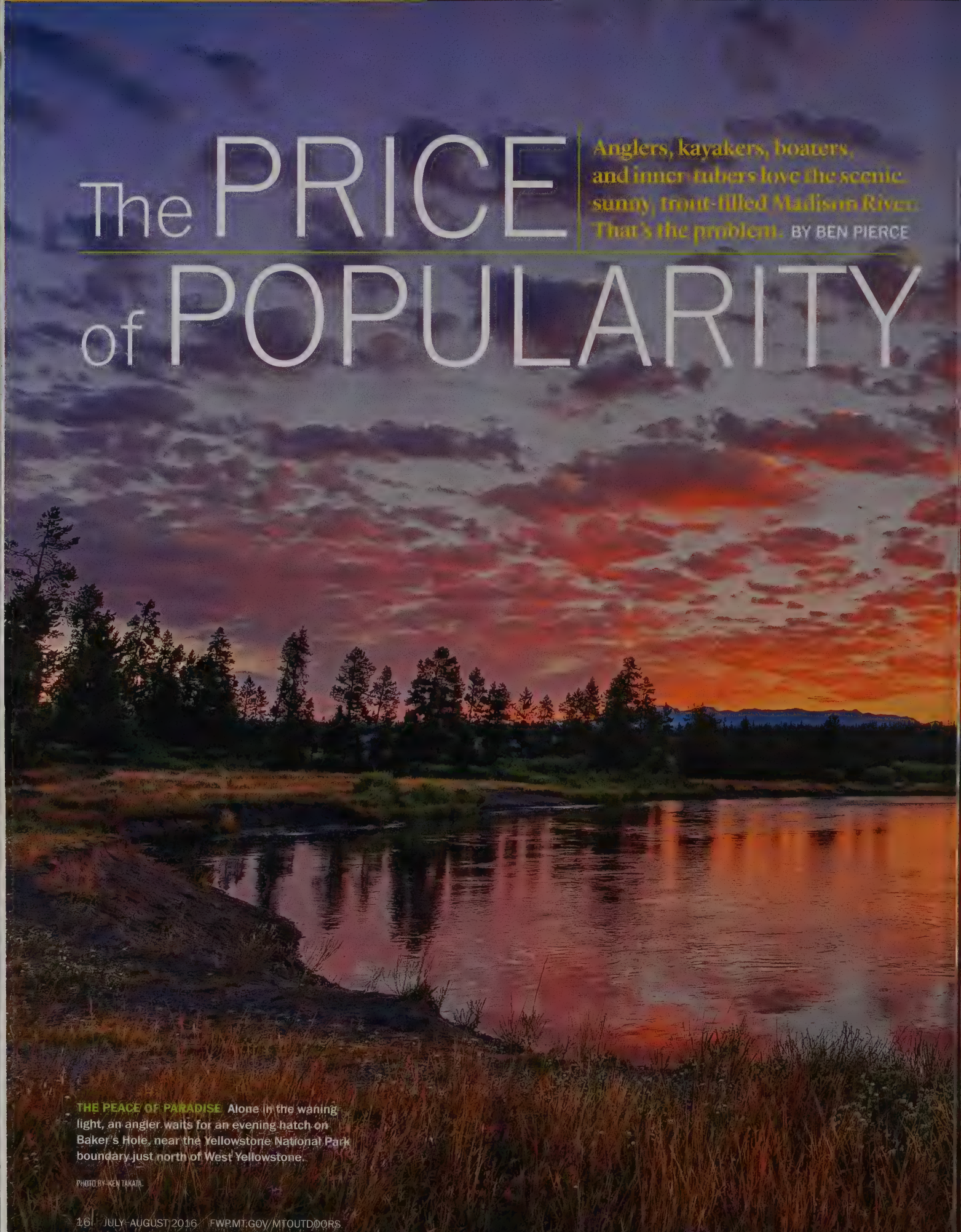
TOP TO BOTTOM: RAPTOR VIEW RESEARCH INSTITUTE / JESSE LEE VARNADO; ERICK GREENE

RAPTOR RESCUE: Above: Baling twine is used to wrap hay and straw. The polypropylene material does not biodegrade and can end up scattered across fields and farm yards for years. Clockwise from top: A Park County Electric Co-op crew removes baling twine from a nest; Kalispell arborist Seth Bergman clears an osprey platform of twine in the lower Flathead Valley; discarded baling twine on a road below an osprey nest; an osprey recovers after having tightly bound twine removed from its legs.

CLOCKWISE FROM TOP LEFT: DON MACCARTER; DON MACCARTER; JOHN WARNER; JESSE LEE VARNADO; SHUTTERSTOCK

The PRICE of POPULARITY

Anglers, kayakers, boaters, and inner tubers love the scenic, sunny, trout-filled Madison River. That's the problem. BY BEN PIERCE



THE PEACE OF PARADISE Alone in the waning light, an angler waits for an evening hatch on Baker's Hole, near the Yellowstone National Park boundary just north of West Yellowstone.

PHOTO BY KEN TAKATA

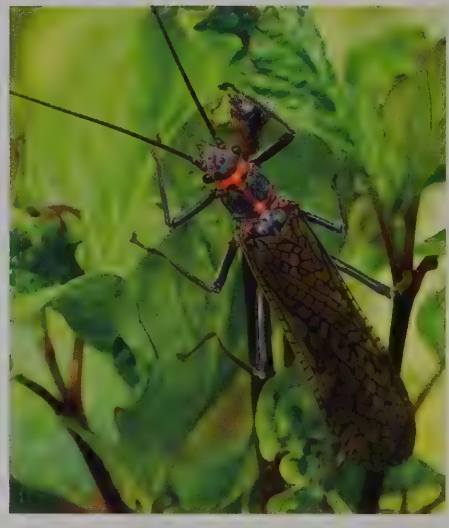
Each spring when snowmelt cascades down from the Gravelly Mountains, water levels on the Madison River rise and a flurry of life erupts. Newly emerging adult caddis flies, midges, and mayflies flutter on the water surface while golden stonefly and salmonfly nymphs crawl out from beneath the bowling ball-sized substrate up onto streamside willows, where they metamorphize into adults and dry their wings in the sunshine.

The wave of life sweeping up the Madison River ushers in a season of bounty for trout that fed little in the cold water of winter. Spoiled for choice, the rainbows and browns now feed on the protein-rich bugs drifting in the current and—to a dry-fly angler's delight—floating on the water surface. The insect abundance draws anglers back to the Madison year after year in the hopes of the ultimate reward: a big trout breaching the surface to swallow a big dry fly, followed by a reel-ripping run and then the sight of the fish's sparkling flanks in the bottom of the landing net.

"The Madison is what so many anglers think of when they think of the West—wide-open spaces, big mountains, stunning backdrops, and lots of big fish," says outfitter Sean Blaine of Bozeman.

For decades, the Madison River has made honest men of anglers known for telling tall tales. But all those stories of unbelievable hatches, postcard-worthy scenery, and large trout have come with a cost.

Today the Madison is one of the most pressured fisheries in Montana. In addition to anglers, increasing numbers of boaters, kayakers, and float-tubers enjoy the river's beauty and mostly gentle, easily navigated current. Like on so many Montana rivers, the growing use creates conflicts. Now anglers, boaters, landowners, and others are trying to figure out how much use the Madison can sustain while providing the recreational experiences so many people seek. "For the health of the trout fishery and to maintain the quality of experience, something needs to change," Blaine says. "I think the Madison is in danger of being loved to death."



BIG BUG Abundant aquatic insects like this salmonfly, shown nearly life sized, bring trout to the surface of the Madison River, creating some of Montana's best dry-fly-fishing.

Ben Pierce is an editor at large for the Bozeman Daily Chronicle.

Yellowstone Park to Quake Lake

The Madison is a river of majestic origins. The Gibbon and Firehole Rivers, excellent trout streams in their own right, flow west and north, respectively, across the Yellowstone Caldera before joining to form the Madison River in the heart of Yellowstone National Park. From there, the Madison winds west through meadows and low hillsides covered with stands of torched timber from the Yellowstone fires of 1988. The park section of the Madison is popular with tourists throughout the summer and with locals who hike in to the legendary Baker's Hole and Barnes Pool.

The Madison exits the park north of West Yellowstone and dumps into the Madison Arm of Hebgen Lake. Montana Power Company built Hebgen Dam in 1914 to regulate downstream flows to Ennis Lake, formed in 1901 by the creation of Madison Dam. Before the dams and the introduction of rainbow and brown trout, the Madison supported native populations of westslope cutthroat trout, Arctic grayling, and mountain whitefish. Though some whitefish and cutthroat remain, today the fishery is composed mainly of non-native browns and rainbows.

In 1959, a 7.5-magnitude earthquake centered 15 miles north of West Yellowstone set off an 80-million-ton landslide that blocked the flow of the Madison River two miles below Hebgen Dam. The landslide, barreling at an estimated 100 miles per hour, killed 28 people camping downstream. The slide formed Quake Lake, which holds a healthy population of trout, some enormous, that venture up the river to Hebgen Dam. In 2006, Bob Jacklin, owner of Jacklin's Fly Shop in West Yellowstone, landed a 10-pound brown trout in the short stretch of river between the lakes. "I consider the Madison below Hebgen Dam the best half mile of river in Montana," Jacklin says. "It's loaded with fish."

Jacklin says nymphs take most of the trout in the fast water below the dam. Small caddis patterns produce good numbers of rainbow and brown trout throughout the year. In February and March, rainbows move up from Quake Lake to spawn in the shallow riffles below Cabin Creek. They're often followed by large browns that can be caught on egg patterns and streamers.

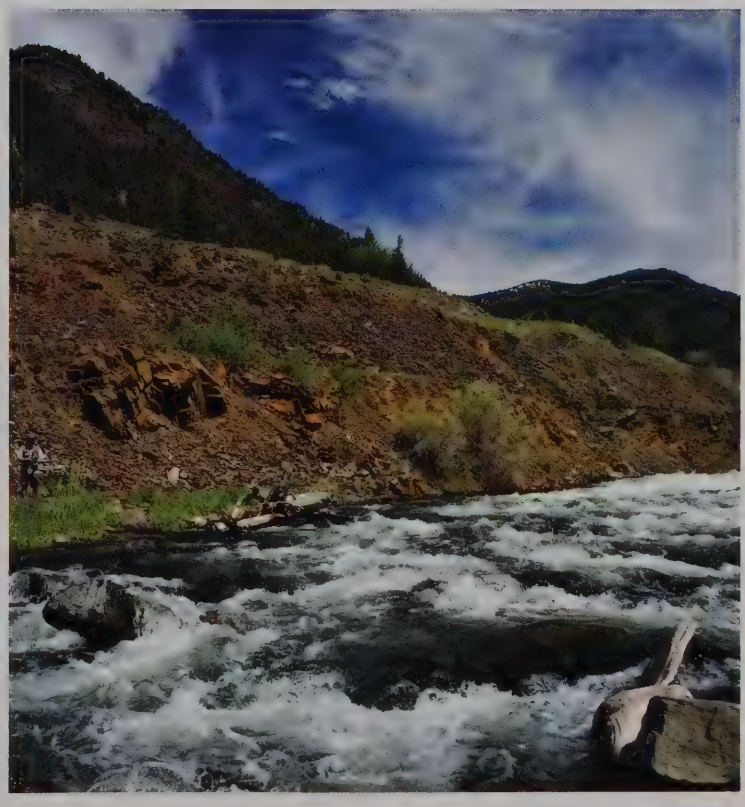
Quake Lake to McAtee Bridge

The Madison River exits Quake Lake in a torrent of whitewater better suited to kayakers than anglers. Though anglers can catch trout below boulders and in the slack water along the banks, the Slide, as it's known, is a challenging if not dangerous place to fish.

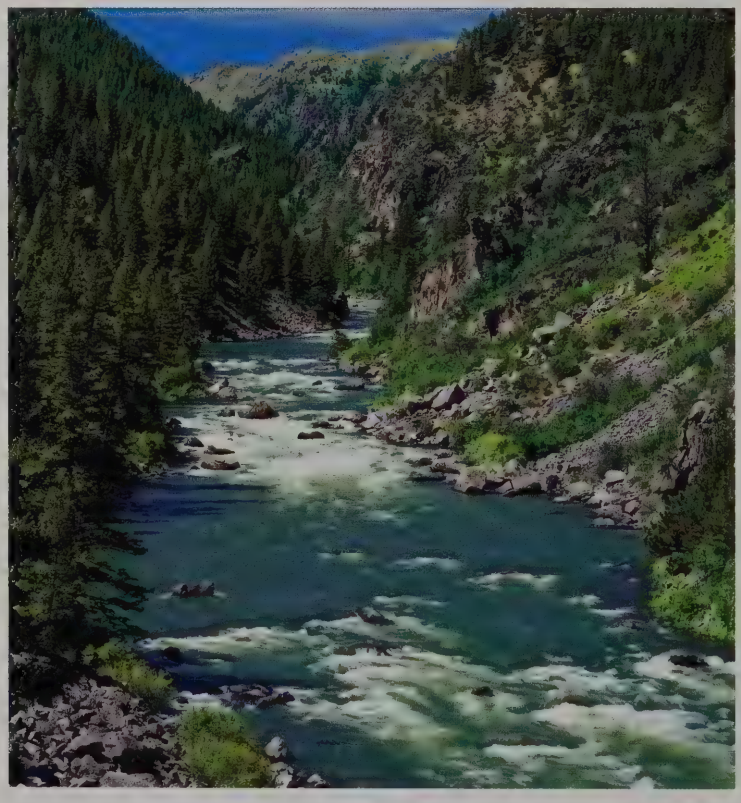
From Lyons Bridge downstream, the Madison starts to slow a bit and widen, turning into its nickname: the "50-Mile Riffle." Continuing down to Ennis, the Madison's steady gradient, varied habitat, and well-oxygenated flows are responsible for the river's prolific insect hatches. "The mix of

CLOCKWISE FROM LEFT: STEVEN ARRE; WILL JORDAN; JOSHUA BERGAN; JOHN JURACEK

WELCOME BACK Top: After declining during the 1990s from whirling disease, the Madison River's rainbow trout population has rebounded to previous high levels. Rainbow trout and brown trout numbers are now about equal. Below left: Anglers catch huge trout in Hebgen Lake, an impoundment just north of West Yellowstone near the border of Yellowstone National Park. Below right: The Slide area below Quake Lake, created in 1959 when a massive earthquake send a landslide into the Madison, is fishable but dangerous for wading. The fast water in this upstream stretch is used mostly by kayakers.



A CLASSIC Above: Madison River scenes like this, near Ennis, are what many people envision when they think of Montana trout water. Below left: Farther downstream, the river narrows as it flows between the towering granite walls of Bear Trap Canyon. Though anglers need to watch for rattlesnakes and black bears in this mostly wilderness stretch, they will rarely run into much competition. Below right: "Another way to get away from the crowds," says Bozeman fishing guide Sean Blaine, "is to fish in early season or late season, or time your launch or wading for before or after the majority of guide trips have headed out."



cobble bottom, boulders, areas of fast water, braids, and runs create little microhabitats with a lot of habitat variability for insects and fish," says Dave Moser, Montana Fish, Wildlife & Parks fisheries biologist in Bozeman.

Moser has been fishing the Madison since he was a teenager. "The appeal for me has always been that the river is wadeable in most places, with the potential to catch a large fish in an absolutely spectacular setting," he says.

Continuing downstream to McAtee Bridge, the Madison offers many access points for wading and floating. The high peaks of the Madison Range, including monolithic Sphinx Mountain, loom on the eastern horizon. During spring and summer, caddis flies swarm above bankside junipers in the late light of day, and the evening rise keeps anglers on the water until well after dark.

> The appeal for me has always been that the river is wadeable in most places, with the potential to catch a large fish in an absolutely spectacular setting."

The river's combination of abundant fish, prolific hatches, and jaw-dropping scenery attracted fly-fishing authors Joe Brooks, Lee Wulff, and others to the Madison in the 1940s and '50s. Their stories in *Field & Stream* and *Outdoor Life* brought the river international acclaim. The publicity also drew an influx of anglers and created the first hints of user conflict. In 1959, float fishing was closed on the Madison, with the exception of a 13-mile stretch from Varney Bridge to Ennis Lake. Though that restriction was later lifted, over the next 30 years others have been tried to maintain a high-quality experience for anglers while accommodating growing commercial and recreational use. For instance, currently two stretches are wade-fishing only.

By the late 1990s, parking lots on the Madison's fishing access sites overflowed with vehicles. Angling pressure, outfitted trips, and nonresident use nearly doubled from 1997 to 2003, primarily on the upper Madison between Hebgen Dam and Ennis Lake. In 2003, FWP documented more than 190,000 angler days, making the Madison the most heavily fished river in the state. Fans of the beloved river worried it was reaching capacity. In 2006, a group of citizens met with FWP and the Bureau of Land Management to discuss concerns that crowding was degrading the experience of river users, harming the river ecosystem, and bothering adjacent landowners.

Surveys conducted by FWP in 2008-09 found that 68 percent of avid longtime resident anglers had either stopped fishing the Madison or fished it less due to crowding and conflicts. At the same time, the survey found a high level of satisfaction among anglers and boaters who had fished the river for only a few years. "A lot of anglers on the Madison don't perceive the crowding issue because they are coming from crowded rivers in other states," says Blaine.

Based on past creel surveys and conversations with longtime anglers, Moser says catch rates have decreased. "Trout populations are at or higher than historical levels," he says. "But the fish are just harder to catch, likely because of the increased boat traffic and the number of flies cast over them each day."

To disperse use on the Madison, the Fish and Wildlife Commission approved opening the river to year-round fishing beginning in March 2016. The change opens three sections on the upper river previously closed from the end of February to the third Saturday in May (see sidebar on page 22).

McAtee Bridge to Ennis

Below McAtee Bridge, the Madison winds through cottonwood-lined banks in a broad valley. The open landscape is home to two wolf packs and thousands of wintering elk, which return to the forested mountains in summer. Because the river braids more in this stretch, the side channels offer anglers opportunities to get off the main river and explore.

The river reach below Varney Bridge is hallowed water. This is where wild trout management in the United States began. In 1966, FWP fisheries biologist Dick Vincent began electrofishing the Madison to survey its trout populations. He discovered heavy losses of rainbow and brown trout because of low flows during February, March, and April. His data helped convince Montana Power to release more water from Hebgen Dam in the spring, and to establish minimum annual flows downstream from the impoundment. The primarily wild trout populations downstream from Ennis Lake increased nearly 50 percent in the years following the flow adjustment. Oddly, trout on the upper river, which contained mostly

CLOCKWISE FROM TOP LEFT: CHUCK HANEY; LUKE DURAN/MONTANA OUTDOORS; VICTOR SCHENDEL; JOHN LAWSING

stocked fish, did not fare as well.

Puzzling over the discrepancy, Vincent theorized that fish stocking on the Madison River was limiting the ability of wild trout to flourish. In 1970, FWP tested the theory with a controversial experiment. The department discontinued stocking the Varney Bridge section, from the bridge downstream four miles to Ennis. Meanwhile, FWP stocked, for the first time, a 1.4-mile stretch of nearby O'Dell Creek, which had a healthy fishery. "When we quit stocking the Madison, populations of wild trout, both rainbow and brown, just started to explode," Vincent recalls. "Numbers of larger brown trout and rainbow trout increased 200 to 400 percent within three years after stocking ceased." At the same time, trout numbers in newly stocked O'Dell Creek dropped from 515 per mile to 280.

> "When we quit stocking the Madison, populations of wild trout, both rainbow and brown, just started to explode."

Later research in Montana and other states showed that hatchery trout push wild fish out of holding lies, making them more vulnerable to fishing. Backed by Vincent's work, the state ended stocking in the Madison in 1974 and ushered in the era of wild trout management

HALLOWED WATER Dick Vincent, of Bozeman, at Varney Bridge. Now retired, the FWP fisheries biologist led a study from 1970 to 1974, on the stretch downstream of the bridge, showing that stocking hatchery fish suppressed wild trout populations. "When we saw large trout numbers in the Varney section triple [after stocking was discontinued], well, that just blew us away," Vincent says.

More water to fish

All of the Madison is now open year-round.

This past spring FWP opened to year-round fishing three sections previously closed from late February to late May. The section of the Madison between Ennis Bridge and Ennis Lake was closed starting in the 1980s to protect nesting Canada geese, but the waterfowl are now so abundant such protection is unnecessary. FWP closed the stretches from Quake Lake to Lyons Bridge and Lyons Bridge to Varney Bridge after whirling disease struck the river in the 1990s. The disease killed 90 percent of the Madison's young rainbow trout between 1991 and 1997, and the closure was aimed at protecting remaining rainbows, which used the upper river to spawn. The Madison has since experienced a remarkable rebound. "We don't know this for certain, but one explanation could be that the fish more susceptible to dying from whirling disease were eliminated from the population, and the ones that remain are more resistant," says FWP fisheries biologist Dave Moser. Rainbow numbers have bounced back to pre-1990s numbers. "Opening the river to year-round fishing will not affect the rainbow or brown trout populations," Moser says. "Our goals with that regulation are to provide a time of year for residents to fish and to spread out the use." ■

CLOCKWISE FROM TOP LEFT: THOMAS LEE; JOHN WARNER; BEN PIERCE; VICTOR SCHENDEL

on rivers throughout the state.

Not stocking rivers was a hard sell when the answer to poor fishing had always been to add more hatchery trout. Business owners in Ennis and West Yellowstone feared the public would no longer come to fish the Madison. But anglers flocked to the river, lured by reports of abundant wild trout. "Dick Vincent did a great job proving that we have a better fishery on the Madison by letting it go wild," Jacklin, the West Yellowstone fly shop owner, says. "Because they're wild fish, they're not as easy to catch, but there are plenty of them out there."

Bear Trap Canyon

Downstream from Ennis, the Madison River passes through the towering granite walls of Bear Trap Canyon. Surrounded by the Lee Metcalf Wilderness, the canyon has no road access and can be visited only on foot or by intrepid boaters. The Class IV Kitchen Sink rapid keeps most float fishermen out of the canyon, and frequent sightings of bears and rattlesnakes convince many hikers to go elsewhere. That makes the canyon a good spot for brave and wary anglers seeking solitude on the increasingly busy Madison.

From Norris Bridge the river continues downstream to Three Forks, where it meets the Jefferson and Gallatin to form the Missouri River. The river slows and warms in this reach but can still provide good fishing. During the "Mother's Day" caddis hatch (late April to early May), blizzards of bugs send trout into a frenzy. The lower river is used mostly by anglers until June. That's when the "bikini hatch" heats up and the river gets taken over by inner-tubers, who enjoy the lazy float from Warm Springs to Black's Ford.

BIG GULP A rainbow trout rises to emerging caddis flies. The Madison's famous "Mother's Day" caddis hatch occurs on the lower river downstream of Ennis Lake typically during the first week of May when water temperatures hit 50 to 52 degrees.

Because it's hard to sneak up on trout amid flotillas of splashing inner-tubers and increasing numbers of fishing boats, many anglers now avoid both the lower and upper river in summer—the prime time for dry-fly fishing. "It's a wide river, so it can support high numbers of people," says Moser, "but you see conflicts at crowded boat ramps and where wade anglers have a hard time finding places to fish."

Hoping to find solutions to the crowding issue, FWP is compiling data on angler use and satisfaction and will present its report to outfitters and other user groups this summer. Then the department will draft an environmental assessment (EA) outlining various options proposed by the public—such as resident-only days or stretches reserved solely for wading anglers—and submit the EA for public review and comment before drafting a final plan. The plan will mark a new course for a river that's at no loss for love.

"When you consider how popular this spectacular river has become, everyone who fishes and loves the Madison should have a voice in its future," says Moser.

WHOSE RIVER IS THIS? The sparkling "50-Mile Riffle" that characterizes the Madison is an easy float with outstanding fly-fishing amid some of the West's most spectacular scenery. Maintaining angling quality like this is the goal of a new FWP plan aimed at managing the river's growing number of anglers and other recreationists.

A BLACK FLASH IN THE MOUNTAIN SKY

It nests behind remote waterfalls, flies high beyond human sight, and winters in places unknown. As it has for more than a century, the black swift remains Montana's most mysterious bird.

BY ELLEN HOROWITZ

The long days of summer make it easy to stay out late, but for Chris Hammond, Kaitlyn Farrar, and Alissa Anderson, that's not necessarily a good thing. Their search for one of North America's most mysterious birds, the black swift, requires surveying at night, which means workdays that sometimes last until well beyond midnight.

After hiking up a narrow canyon late one July evening, Hammond, a Montana Fish, Wildlife & Parks nongame wildlife biologist in Kalispell, and Farrar and Anderson, FWP wildlife technicians, arrive at a waterfall in the Kootenai National Forest near Libby at about 9 p.m., not long before dusk. The air is filled with the spray of cascading water, and the lush green moss and ferns below create an oasis-like setting in the otherwise harsh mountain environment. Hammond and his crew scramble over downed logs and rocks looking for places where they can sit and look through binoculars for mossy, cup-shaped nests hidden on ledges behind the veil of water. After just a few minutes, Hammond spots a nest tucked into a pocket-like niche in the cliff. In the nest is a single soot-colored black swift nestling.

As twilight approaches, an adult black swift streaks through the darkening canyon on long, sickle-shaped wings before stopping abruptly to perch at the edge of the nest. It's here to provide the fledgling's dinner—perhaps its only meal of the day—and spends several minutes regurgitating flying ants and other winged insects into the chick's gaping mouth before disappearing back into the night. Even under the best lighting conditions, a blink of an eye is enough to miss an adult swift traveling up to 100 miles per hour. At dusk the wildlife crew must watch with particular intensity.

As the waning light diminishes, another black swift shoots through the canyon and lands at a different nest. Then a third bird zips overhead, the crew oohing and aahing like spectators at a fireworks display. Silhouettes of the long-winged birds continue to dart past as night falls, but soon it's too dark to see. "We have about a 45-minute window, and then it's over," says Hammond. The crew members confirm four nests and suspect a fifth, but they'll need to return during daylight to confirm that location. They turn on their headlamps for the long, rugged hike out and reach the truck around 11:30. It's still a three-hour drive back to town.

BEYOND HUMAN SIGHT

For more than 150 years the black swift confounded the ornithological world. It was one of the last bird species described to science, in 1857, largely because it flew to heights beyond the range of human sight. Because the bird nests in remote cliffs, behind waterfalls, and in caves, it took scientists another 44 years to discover the first black swift nest and egg. Then it wasn't until 2010, using sophisticated tracking technology, that biologists learned where at least a few of the birds wintered. For ornithologists, the black swift has been nearly as elusive as the likely extinct ivory-billed woodpecker of the American Southeast.

The first recorded sightings of black swifts in Montana came in the 1940s, in the Mission Mountains and Glacier National Park (GNP). It took until the early 1960s before the first two nest colonies (areas containing two or more nests) were discovered, in GNP. More than 40 years passed before biologists next documented a nesting colony.

For the past decade, biologists have been trying to make up for lost time. Across the West, researchers are scrambling to find additional nesting sites so they can learn more about the birds and protect their rare, critical habitats. So far, only about 200 nests have been documented range-wide.

In Montana, Hammond credits Dan Casey with starting the state's black swift monitoring project in 2004. That same year Casey, at the time the Northern Rockies

Longtime Montana Outdoors *contributor Ellen Horowitz lives in Columbia Falls.*

GLEN TEPKE/VIREO

Flying up to 100 mph, black swifts dart in and out of an unidentified waterfall. The birds nest near or even behind falls in remote mountainous areas of Glacier National Park and other parts of northwestern Montana.

conservation officer for the American Bird Conservancy, discovered a new nest colony in Glacier at Haystack Falls, bringing the state's total at the time to three. "By putting together a list of 32 waterfalls that had the right characteristics for nesting, Dan got us on track for how to survey and what to look for," says Hammond.

With its hundreds of waterfalls, Glacier is a black swift nesting mecca. But finding which falls contain nests is not easy. Biologists focus surveys on areas that appear to have quality nesting habitat and where hikers and others have reported seeing the birds. Researchers in Colorado found that black swift nests are most likely found behind waterfalls that 1) have flowing water during late summer, 2) are inaccessible to predators such as mink, 3) provide unobstructed flyways to and from the nest, and 4) contain moss for nest building.

Because many mountain waterfalls are far from managed trails, reaching them requires the climbing skills of a mountain goat. Survey crews must bushwhack through tangles of brush and blowdown, wade streams, and trudge across steep, rocky, wet terrain. "Hiking down slippery slopes in grizzly country in the dark is not for the faint of heart," says Glacier National Park wildlife biologist Lisa Bate.

Nesting behind waterfalls isn't the black swift's only odd trait. Unlike other "neotropical" birds—those that breed in the United States and Canada while wintering south of central Mexico—the black swift is a late nester. "Most neotropical migrants finish their breeding season by the Fourth of July in this area, and black swifts are just getting started," says Bate. "And the fact that they build their nests where it's cool and wet is totally counterintuitive."

Unlike North America's other three swift species, the black swift lays only a single egg and sits on it for an average of 26 days—a week longer than other swifts' incubation periods. The chick remains in the nest for 48 days, nearly twice as long as birds of similar size. Another unusual thing about black swifts: Adults usually disappear from the nest all day to feed, and only return to feed their chick at dusk.

> "The air is filled with the spray of cascading water, and the lush green moss and ferns below create an oasis-like setting in the otherwise harsh mountain environment."

WINTER IN BRAZIL

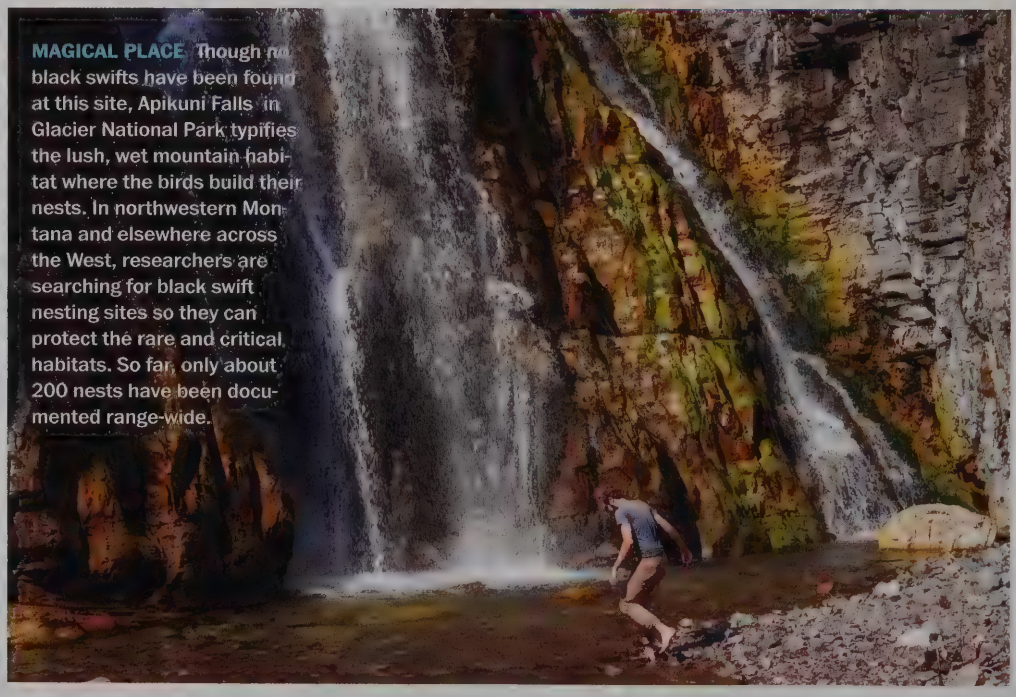
Until recently, no one had any idea where black swifts spend the winter. In 2009, Colorado scientists fitted four black swifts with small, backpack-style tracking devices. The following year, when the birds returned to their western Colorado nesting sites, researchers recaptured three of them and retrieved the data. They learned that the black swifts had wintered in the lowland rainforests of Brazil—a country previously not known to house the species.

While thrilling to ornithologists, the discovery created more questions. How did the black swifts make their 8,600-mile round-trip journey? Did they "aerial roost"—an avian form of autopilot that allows them to shut down part of their brain to rest while flying during migration—when they traveled up to 244 miles per day? Why Brazil? Why couldn't the birds have found suitable wintering areas closer to Colorado? And what about other black swifts in Colorado and elsewhere? Do they too winter in Brazilian rainforests?

While American bird conservationists try to identify and protect black swift nesting sites in this country, it appears that the fate of the birds' South American habitat is equally important.

The North American Breeding Bird Survey estimates a total population of only 15,000 black swifts, and numbers appear to be declining range-wide at about 6 percent per year. Logging in the Amazon Basin could be one factor. Another may be rising global temperatures drying up breeding areas in the bird's northern range.

Bate says black swifts don't return to nest where waterfalls in the park have dried up, such as during a drought (though they sometimes return if water begins



MAGICAL PLACE Though no black swifts have been found at this site, Apikuni Falls in Glacier National Park typifies the lush, wet mountain habitat where the birds build their nests. In northwestern Montana and elsewhere across the West, researchers are searching for black swift nesting sites so they can protect the rare and critical habitats. So far, only about 200 nests have been documented range-wide.

CLOCKWISE FROM LEFT: DEE LINNELL BLANK; TOM ULRICH; SHUTTERSTOCK

flowing again). The colony recorded in 2004 at Haystack Falls originally contained three nests. Bate says that for the past three years, as the flow has dropped to just a trickle, black swifts have used only one nest. "Will those other nests ever be reoccupied? We don't know," she says.

In every western state and province where it lives, the black swift is a species of conservation concern. Last year Alberta listed it as an endangered species. Hammond says FWP recognizes that the best way to conserve the black swift population in Montana is to gather as much baseline information as possible. "Only with that data can we later see how the population might be changing and get to the bottom of why," he says.

The black swift is classified in Montana as a Species of Greatest Inventory Need. Because they know so little about the bird, biologists here have no idea if the population is thriving or on the verge of disappearing. Though scientists have identified where some black swifts in Colorado winter, no one knows if Montana's swifts migrate to Brazil or elsewhere. Research done in Montana reveals little about the species' populations. "Even if we find a nest, we may never know if it actually fledges a young," Hammond says. "We're only there in a snapshot of time and space."

By the end of the 2015 field season, Hammond and his crew had conducted 23 ground surveys and found two new nest sites. Five surveys by park staff in Glacier turned up no new colonies. That brought the known number of black swift nesting colonies in the state to 13: six in Glacier, one in the Bitterroot Valley, and six in the Flathead and Kootenai areas.

FINALLY After feeding all day, an adult black swift returns to the nest and regurgitates flying insects into the mouth of its single fledgling, which stays in the cool, wet nest for 48 days.

Hammond says that even though surveying black swifts is time consuming and often grueling, it's a thrill when he finally finds one. "We celebrate," he says. "It's like, they really *do* exist!" The biologist notes that identifying more nest sites and the characteristics of the sites will help him and other scientists understand how the habitats are changing and how the birds respond to the changes. "We may not know how the black swift fits in," he says, "but the fact that it's part of a bigger picture that we humans also belong to is reason enough to protect it."

If you're hiking, camping, or picnicking near a waterfall, watch for these speedy flyers with long pointed wings dashing behind the falls. During stormy weather when barometric pressure lowers, look for black swifts foraging for insects above the surface of lakes or close to the ground. Please report sightings to Chris Hammond at chammond@mt.gov or Lisa Bate at lisa_bate @nps.gov.

THREE BLACK SWIFTS' AMAZING 8,600-MILE JOURNEY

Biologists have long known the winter range of every North American bird species except one: the black swift. Difficult to find, see, and capture, the elusive bird has challenged scientists hoping to learn where it went after leaving the remote Rocky Mountain West waterfall habitats where it breeds. In 2009, researchers in Colorado—home of roughly half the black swift nesting sites in the United States—used fishing nets on long poles to scoop four black swifts out of the air. They fitted the birds with tiny backpacks containing miniature geolocators. In 2010, the researchers recaptured three of the birds and downloaded the geolocator information to learn that the birds had spent the winter in the lowland rainforests of Brazil, more than 4,000 miles away. The exciting news raises concerns: Amazon forests are being clear-cut for agriculture. Researchers are now tracking other black swifts. If they can learn where the birds congregate, conservationists could then work to protect that critical winter habitat.

Amazon clear-cuts could threaten black swifts.

A Great Place To Be a Curlew

Thanks to ranchers, tribal leaders, and other conservationists, the Mission Valley's intermountain grasslands still provide abundant habitat for the nation's largest shorebird and other wildlife. **By Ben Long**

Ice-carved peaks of the Mission Mountain Range are aglow in the evening sun, sharp against the black of massing thunderclouds. A long-billed curlew drops like a smokejumper from the summer sky, calling its own name: an up-rising *curlewwww*. The bird descends on cupped wings, extending its slender legs to land so it can probe the wet meadow with its impossibly long bill for snails and insects.

With a wingspan of nearly three feet, the curlew is North America's largest shorebird. The only species remotely similar in appearance is the marbled godwit, about two-thirds the size and with a straight bill rather than the curlew's downward-curving one.

Long-billed curlews winter mainly on the warm coasts of Mexico, Texas, and California, extracting crabs, shrimp, and other tasty creatures from wet sand and mudflats with their scythe-like bills. As do most shorebirds, they abandon the fertile coastlines in spring to find grasslands for nesting and rearing their young.

Though long-billed curlew populations are declining in much of their range nationwide, the birds appear to be faring well in many parts of Montana. Roughly 20 percent of all long-billed curlews in the United States live here, and statewide curlew surveys conducted by Montana Fish, Wildlife & Parks in 2012 found decent abundance and distribution.

These stately birds nest throughout much of Montana, including intermountain grasslands west of the Continental Divide. There, conservationists are using curlews as a recognizeable symbol for prairie ecosystems that most people don't recognize as important for wildlife. "Western Montanans know that wildlife use forests, lakes, and rivers, but the importance of the in-between mosaic of grasslands and wetlands is often overlooked," says Amy Seaman, Montana Audubon associate director of conservation.

PRAIRIES BETWEEN THE MOUNTAINS

Most people don't picture prairies when they envision western Montana, with its snow-capped mountains, tree-ringed lakes, and old-growth cedar forests. Yet grasslands have long dominated the vast Mission and

POSTER BIRD With its long, downward-curving bill and three-foot wingspan, the curlew is hard to misidentify. Conservationists are using the shorebird to raise public awareness of the intermountain grasslands where it lives. "The diversity of mixed-grass prairie and shallow wetlands in intermountain grasslands creates great wildlife habitat, and the curlew is a recognizable species we're hoping will bring attention to these areas," says Amy Seaman, associate director of conservation for Montana Audubon.

JOHN NOSH

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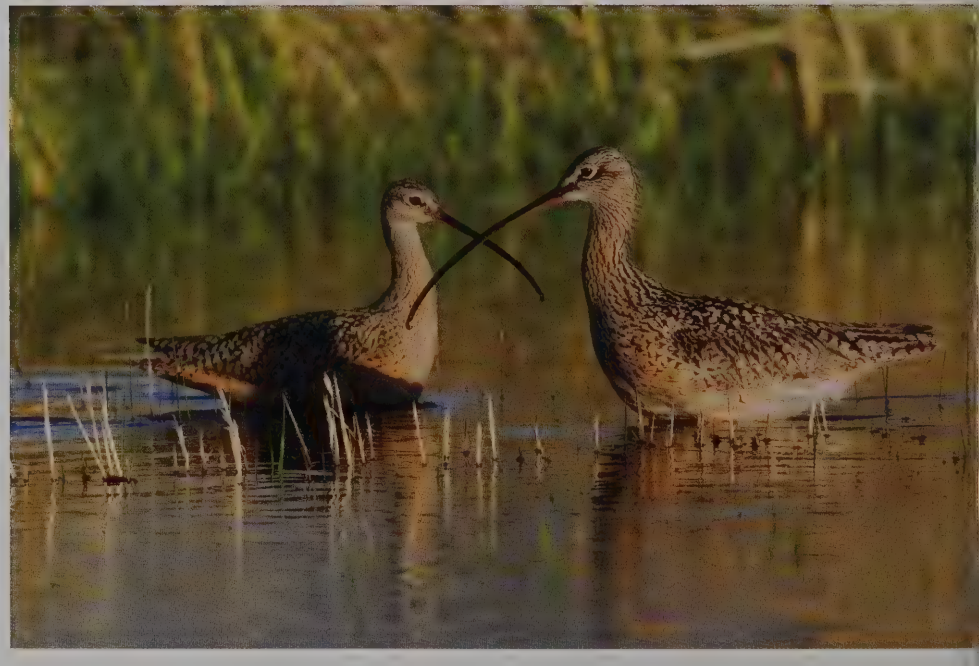
Flathead Valleys surrounding Flathead Lake between the Mission and Salish Mountains. Intermountain, or foothill, grasslands also exist between other mountain ranges on both sides of the Continental Divide.

The large, open valleys are formed by large meandering rivers and are covered in grasses such as rough fescue and bluebunch wheatgrass as well as a wide range of forbs (wildflowers). Sagebrush occasionally grows in drier areas, while moist lands support sedges and bulrushes. In the Mission and Flathead Valleys, wet meadows and marshes dot the grasslands, creating a patchwork of habitats for amphibians, reptiles, songbirds, waterfowl, raptors, and big game such as mule deer, pronghorn, and black and grizzly bears. Shorebirds abound.

The lush, sweeping valleys cradled by the peaks of the Rockies attract people, too. Farmers plant the rich soil and ranchers graze cattle on verdant pasture. Increasing numbers of people are building homes here, surrounded by some of North America's most spectacular scenery. The challenge for conservationists in western Montana and elsewhere is to keep the grasslands intact in the face of growing human use. "Of course economic development is important for communities," says Seaman. "Our goal is to find ways for it to happen while still maintaining the wildlife and habitats that have been here for thousands of years."



MONTANE PRAIRIE Above: An intermountain grassland in the Blackfoot River valley shows the diversity of grasses and forbs that characterize these productive habitats. The prairies often contain wet meadows and other shallow wetlands that curlews use for courting (below) and feeding. Below right: The birds nest in short grass, where their mottled plumage works as camouflage.

A FEW MONTHS IN MONTANA

As they have for millennia, from late March to early April curlews follow the mysterious call of instinct and fly from their wintering grounds along the Pacific Coast, Gulf Coast, and central Mexico up to 2,000 miles inland. From early April to May, the oversized sandpipers drop from the sky onto grasslands of the Intermountain West and Great Plains. Here they stalk through pastures, probing mud and cow flops for larvae and earthworms if the ground is soft, or snatching grasshoppers, beetles, or even young voles and shrews in drier locations.

Males meet females, scratch a little nest depression in the duff, and use their mottled brown plumage as natural camouflage as

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A longtime Montana Outdoors *contributor, Ben Long lives in Kalispell.*

they incubate their clutch of four eggs. The pair fearlessly attacks any egg-eating bull snake, coyote, magpie, or other prairie predator that comes too close.

Males and females take turns keeping the eggs warm. In late June, females leave the nest shortly before the eggs hatch and fly back to wintering grounds—considered a "fall" migration even though summer has barely begun. The males finish rearing the brood until the young birds fledge when they reach roughly 40 days old. Then they too head south.

converting virgin grassland into cultivated row crops robs the birds of habitat. "Perhaps the single biggest opportunity to stem the tide of continued long-billed curlew population declines is to prevent the further plowing of native prairie wherever it occurs within the species' range," states the American Bird Conservancy's 2013 document, *Conservation Strategies for the Long-billed Curlew*.

As long as grazing cattle aren't allowed to trample nests or overgraze pastures down to the nubs, cows and curlews usually get along fine. Cattle keep grass cropped to shorter

> **"The diversity of prairie and wetlands in intermountain grasslands creates great habitat, and the curlew is a recognizable species we're hoping will bring attention to these areas."**

During breeding season, curlews fare best in expansive prairies of mixed-height grasses combined with wet meadows, mudflats, or shorelands. The shorter grass is for nesting, the mid-height grass is where the newly hatched chicks hide, and the wet and open areas provide food.

Agriculture is a mixed bag for the large shorebirds. Some practices, such as flood irrigation in alfalfa fields, provide places for curlews to forage. On the other hand, heights that curlews prefer for nesting. The birds also like to nest near cow flops so newly hatched young can feed on the nutritious insect buffet underneath.

Ben Montgomery, a district conservationist with the federal Natural Resources Conservation Service (NRCS) in Ronan, helps local ranchers improve their grazing practices for the good of livestock and wildlife. For instance, by moving cattle among three or four different pastures throughout the year, ranchers can boost grass production and increase livestock weight while helping curlews and other grassland species. "More and more ranchers are seeing the benefits of making some minor grazing adjustments," Montgomery says. To sweeten the deal, the NRCS pitches in to help pay for new fencing, livestock watering systems, and other infrastructure that lets ranchers rotate cattle among several pastures.

CLOCKWISE FROM LEFT: JOHN LAMBING; CHUCKINGALE ROBBINS; KEN ARCHER

CURLEW EDEN

Though curlews can tolerate some forms of ranching and farming, it's a different story when it comes to the roads, parking lots, and buildings of urban and suburban development. Fifty years ago, a person could likely hear the call of a curlew along Missoula's Reserve Street, the Bitterroot Valley's Highway 373, or Kalispell's Consumption Junction. A curlew flying these commercial corridors today would need to continue for miles to locate a safe and restful landing spot.

The Mission Valley, between Polson and Missoula, is different. Virgin grasslands exist in some of the drier, hillier areas that are harder to till. Though much of the remaining land was farmed decades ago, many tracts have since been planted to pasture grasses and are grazed by the cattle of small-parcel ranchers.

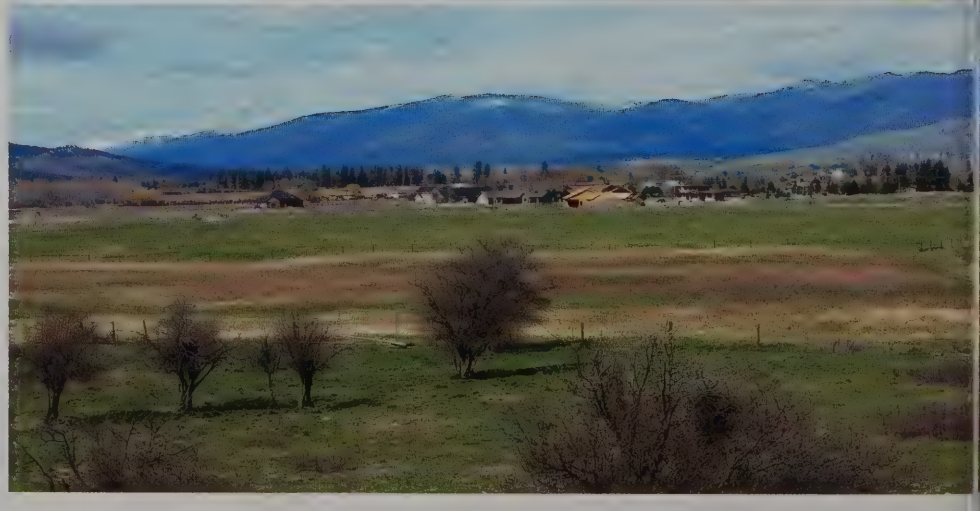
Confederated Salish and Kootenai Tribes' (CSKT) biologist Art Soukkala says the tribes have invested heavily in maintaining and restoring grasslands and wetlands across the Flathead Indian Reservation. The CSKT are using habitat mitigation money that Montana Power Company was required to pay after it built Kerr Dam, which inundated thousands of acres of wildlife lands on tribal property. Grasslands are reinvigorated with prescribed burns, restored with native grass plantings, and protected from invasive species with selective control methods, Soukkala says.

The Mission Valley's grasslands have been officially recognized as important for conservation since 1908, when Congress established the National Bison Range. Thirteen years later, Ninepipe National Wildlife Refuge was created, protecting an additional 4,000 acres of wetlands and prairie within the boundaries of the reservation. Nearby Ninepipe Wildlife Management Area and CSKT conservation lands protect another 4,000 acres total. "The Mission Valley has a

great diversity of wildlife because of its mosaic of grasslands, shrubs, prairie potholes, and wetlands," Seaman says. "These public lands protect some of the best of it."

Lacking adequate funds, grassland conservationists undergo a kind of habitat triage. In some places, like much of the Bitterroot, Flathead, and Missoula Valleys, development is so rapid that native grasslands are too far gone to rescue. In the Mission Valley, there is still plenty of habitat to conserve, so conservationists turn their attention there.

The Mission Valley provides some of western Montana's most important curlew habitat. To settle, curlew pairs need grassland (preferably native) parcels of at least



GRASSLAND FRIENDLY? Top: Cattle that are rotationally grazed can benefit prairie plant communities and the curlews living there. Below and bottom: When grasslands are plowed and converted to row crops or housing, curlews and many other native species disappear.

> "More and more ranchers are seeing the benefits of making some minor grazing adjustments."

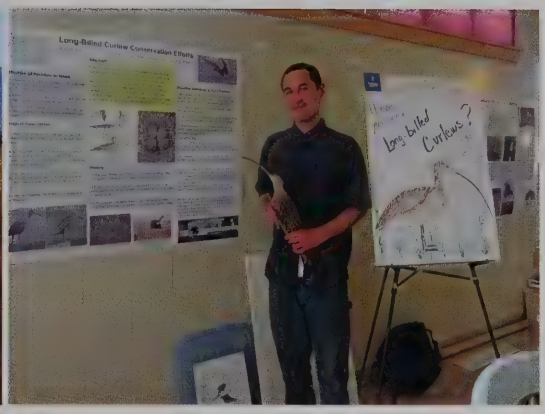
120 acres. The Mission Valley still has prairie tracts that size and larger. Lake County is a "focal area" where biologists focus their conservation work. Within the county, particularly important curlew areas are the Camas Prairie and the upper Little Bitterroot and Mission Valleys. "We can't work everywhere, so we try to figure out the best places to put our energy," Seaman says.

Fortunately, the CSKT and many private ranchers and farmers in the Mission Valley recognize the importance of grasslands. "A lot of landowners and land managers want to conserve their land for the long term," says Janene Lichtenberg, head of the Wildlife and Fisheries Department at Salish Kootenai College in Pablo. "The curlews are here in large part because so many people are doing a good job."

ON THE LOOKOUT

For the past four years, the college, the CSKT, and Montana Audubon have cooperatively coordinated volunteer survey routes in the Mission Valley to locate curlews. "The idea is to raise awareness of conserving both the birds and intermountain grasslands,"

says Lichtenberg. When volunteers see one of the long-billed shorebirds, they record the location and other information. Later the information is entered into a database maintained by the Montana Natural Heritage Program, which creates digital maps showing curlew habitat. At the college, Lichtenberg organizes students and other volunteers to travel survey routes transecting the valley. Sometimes they don't have to look far. Curlews are occasionally spotted near the dorms, just off campus. "One student was disappointed because he'd run some curlew routes and hadn't seen any," say Lichtenberg. "When he went back to his dorm room, he heard one outside and was thrilled."



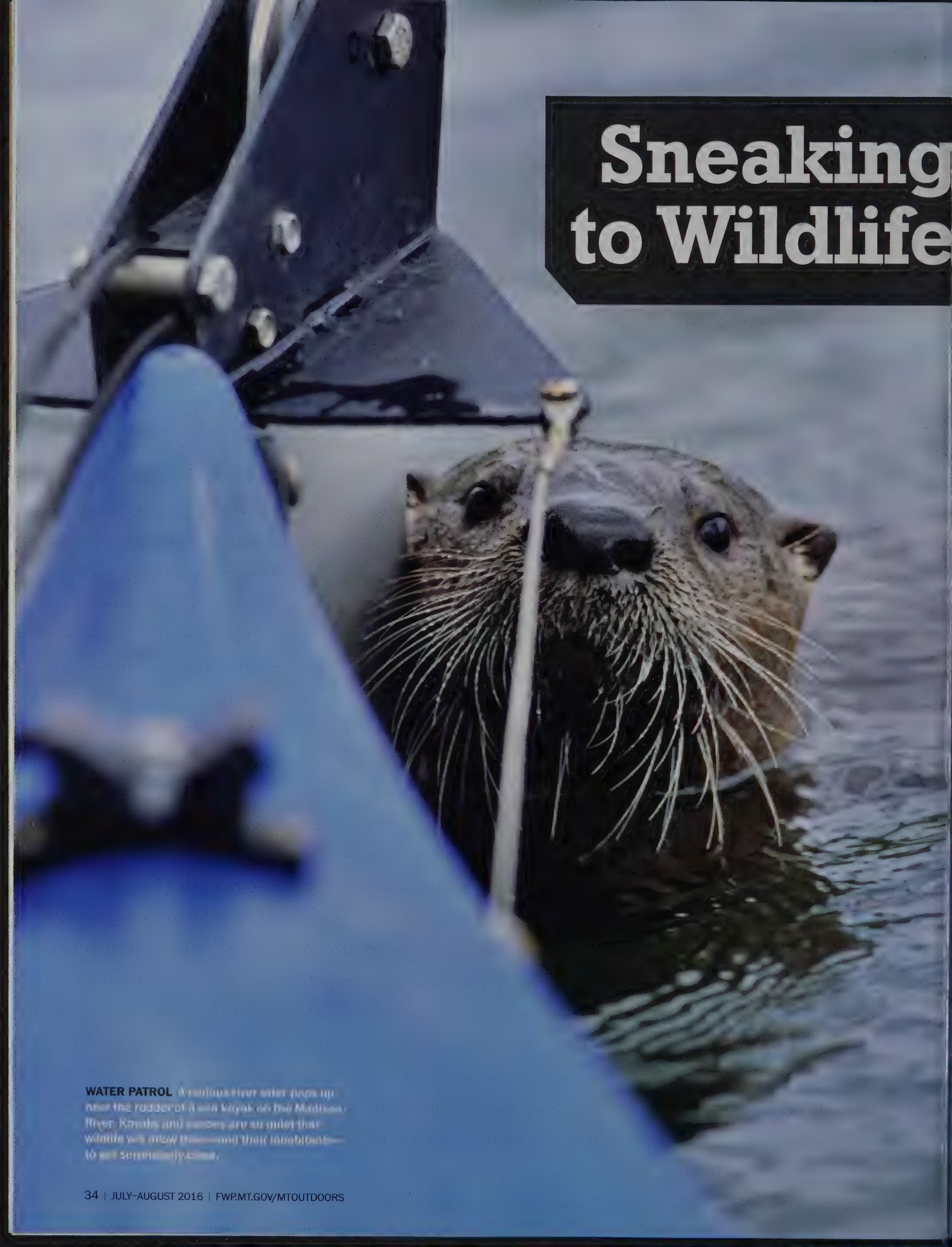
UNDERGRAD STUDIES Above left and right: Students at Salish Kootenai College in Pablo look for curlews along a riparian area and present a poster on the native shorebirds. Below: The future of curlews in western Montana is tied to the intermountain grasslands where they live and the people—young and old—working to conserve that habitat.

The fabric of native prairies throughout much of North America is tattered, patched, and threadbare. Thanks to ranchers, tribal members, biologists, and others who care, the prairie tapestry in the Mission Valley is still relatively intact. "We're not facing any big threats to the Mission Valley's grasslands right now, and that's a good thing," says Montgomery. "Over the next 20 years, with the right grazing practices and other conservation measures, we could see a massive improvement in grassland health and the wildlife that live here."

To report a curlew sighting in the Mission Valley, visit the Montana Audubon website at mtaudubon.org and scroll down to the curlew survey page.

CLOCKWISE FROM TOP LEFT: CRAIG & LIZ LARCOM; JANENE LICHTENBERG; JANENE LICHTENBERG; DONALD M. JONES; STEVEN AKRE; CHUCK HANEY

Sneaking to Wildlife



WATER PATROL A curious river otter pops up near the rudder of a sea kayak on the Madison River. Kayaks and canoes are so quiet that wildlife will allow them—and their inhabitants—to get surprisingly close.

in Havens

By quietly cruising down a river in a canoe or kayak, you can see more birds and mammals than you ever thought possible. By John Manuel

MICHAEL HARING

I was riding the swift current on the Sun River north of Augusta when a pair of Canada geese and four goslings appeared on river left. They waddled to shore away from our flotilla of canoes—nothing remarkable about that. On river right, high over a grove of cottonwoods, a golden eagle circled in the noonday sun. I watched it for a moment, then glanced downstream to check for rocks. When I looked again, the eagle was just above the cottonwoods, coming in at top speed.

"Eagle on the right!" I yelled.

Like a fighter plane on a strafing run, the eagle soared right between the canoes—head, neck, and wings in perfect alignment—and nailed one of the goslings on the far bank.

"Oh, man, did you see that?"

"Amazing!"

There are many ways to see wildlife in Montana, but I've found none better than by paddling rivers and streams. The aquatic environments support insects, fish, reptiles, and amphibians, which in turn draw birds and mammals that feed on them. Montana rivers are often bordered by diverse grass, shrub, and tree species that provide food and cover for everything from mice to moose. Rivers also serve as corridors for wildlife traveling from one territory to another.

One way to reach rivers is to walk. But by the time you reach the water, most critters will have heard or seen you and raced off. By traveling by water, however, you can silently glide into these riparian wildlife refuges and spot birds and mammals often before they're aware you're there.

I prefer a canoe, but a kayak or an inflatable one-person pontoon boat works, too. These watercraft put you at eye-level with wildlife, so you hear the same sounds and breathe the same air they do. It's an altogether different experience from watching wildlife while in a car or through binoculars.

Note: For your own safety and theirs, don't paddle too close to wildlife. Try not to disturb nesting birds and mammals with young. And keep at least 100 yards away from potentially dangerous species such as moose and bears. ▸▸

Three rivers for starters

Though wildlife can be found on rivers of any size, I prefer smaller ones or larger rivers that braid into multiple channels around wooded islands. A favorite is the Jefferson. Formed by the confluence of the Big Hole and Beaverhead Rivers, the Jefferson flows 83 miles through diverse habitat including steep-walled canyons, meadows, marshes, and cottonwood groves. I almost always see bald eagles, ospreys, and white pelicans, along with white-tailed and mule deer. I've also seen wild turkeys, common mergansers, belted kingfishers, various waterfowl, and neotropical warblers. It's not surprising to see a moose.

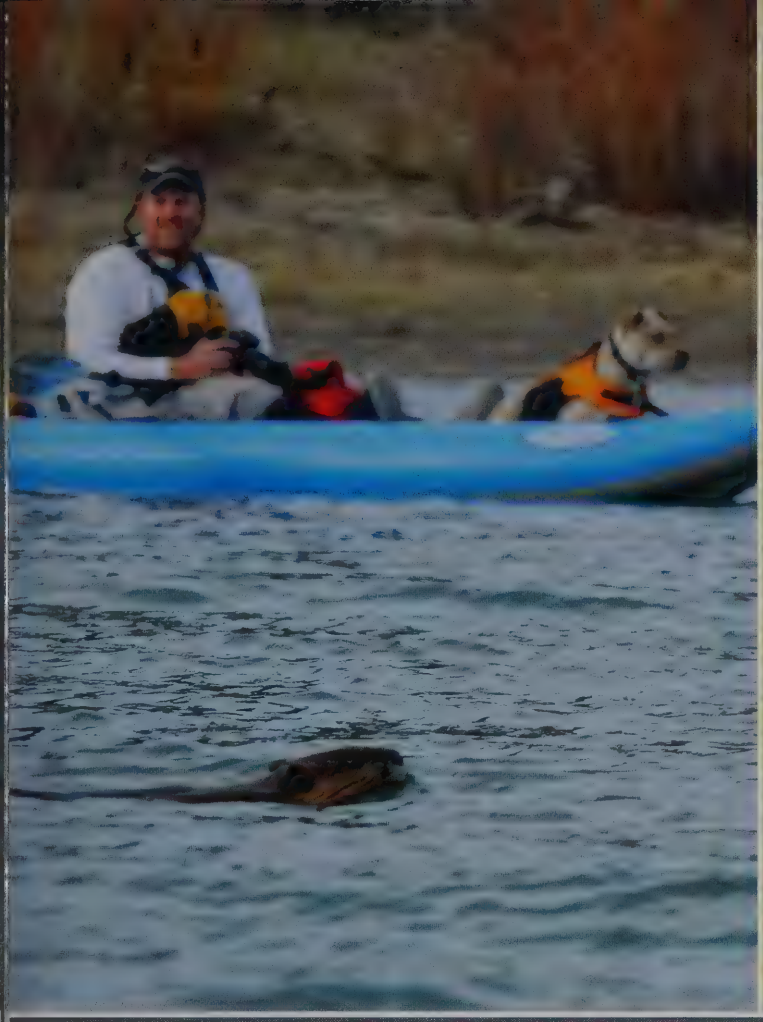
Designated as part of the Lewis and Clark National Historic Trail, the Jefferson is a relatively easy river to paddle—rated Class I on American Whitewater's International Scale of River Difficulty. The only permanent hazards are the remains of two diversion dams, one just below Waterloo Bridge and another at the Parrot Castle Fishing Access Site (FAS). In low water, both can be easily portaged or waded.

Several access points along the river allow for trips of varying length. Wildlife is most prolific along the 44-mile stretch from Twin Bridges to Cardwell. The river winds and braids among islands and gravel bars. Outfitters in Three Forks and Silver Star rent canoes and kayaks and provide shuttle service and guided trips.

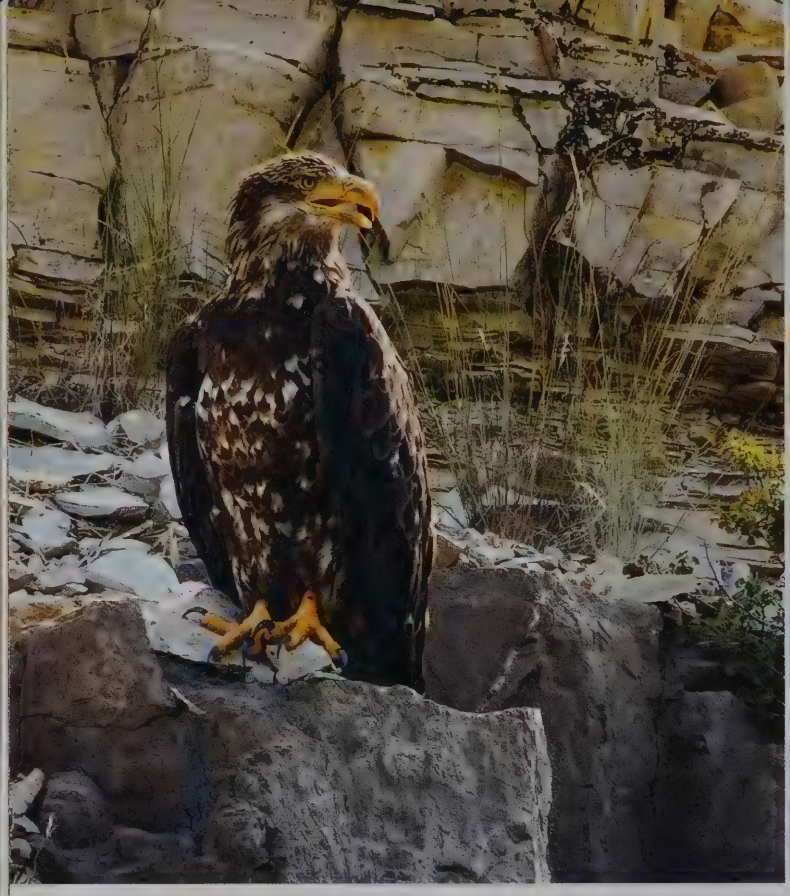
Another favorite for midriver wildlife viewing is the lower Madison River from Greycliff FAS to Missouri Headwaters State Park near Three Forks. Like the Jefferson, the lower Madison features braided channels with many islands. The river and bordering floodplain harbor birds of every

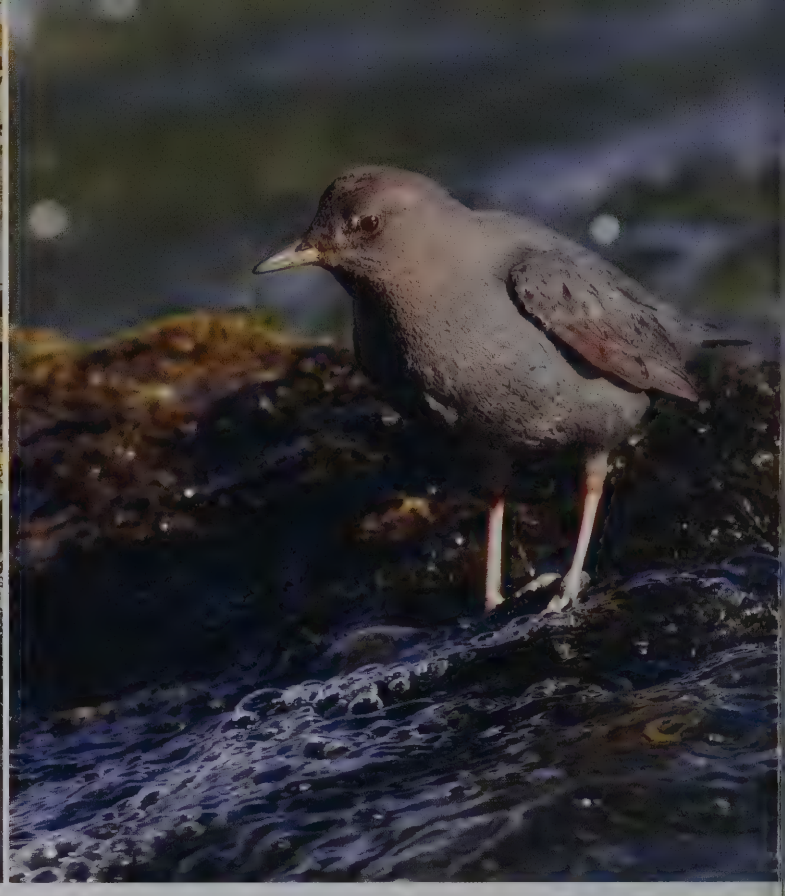
John Manuel of Durham, North Carolina, frequently visits Montana to view and photograph wildlife from his canoe.

CLOCKWISE FROM TOP LEFT: DONALD M. JONES; MICHAEL HARING; DALE L. DUFOUR; CAROL POLICH; DAVE RUMMANS



RIVER VIEW By silently gliding along rivers and streams, canoeists and kayakers can see a surprising diversity of wildlife species, which are abundant along riparian habitats. Clockwise from top left: Bull elk browsing streamside; a floater eyeing a beaver; a black bear swimming along the Clearwater River; common mergansers scrambling across the Missouri River; an otter's-eye view of a canoeist in the Missouri River Breaks.





STREAMSIDE BIRDS Above left: immature bald eagle along the Smith River; an American dipper (water ouzel) on a channel of the Jefferson River.

shape and size. In one day I saw white pelicans, hooded merganser families, bald eagles, and various hawks, herons, and owls. As the evening drew to a close, I also watched a trio of sandhill cranes in flight silhouetted against the setting sun.

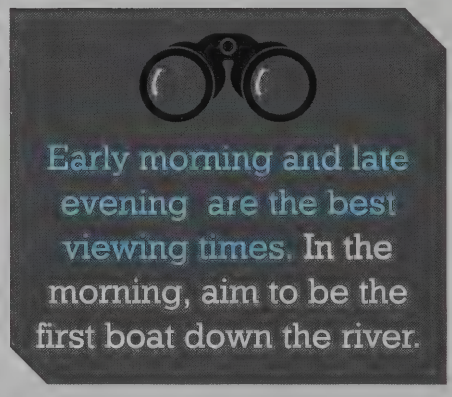
The full run on this stretch of the Madison between Greycliff FAS and Missouri Headwaters is 19 miles, which means a long day of paddling. A shorter run is between these fishing access sites: Greycliff to either Cobblestone (6.7 miles) or Blackbird (about 16 miles).

One of my favorite small rivers for viewing wildlife is the upper Clark Fork between Warm Springs and Missoula. The river parallels I-90 for 125 miles, coursing through alfalfa fields and willow thickets. I always see white-tailed deer in this stretch, and often beavers and even otters. The narrow, twisty channel can produce brief but exciting wildlife encounters.

The upper Clark Fork was long polluted from former mining operations around Anaconda, but restoration work over the past decade has improved water quality considerably. Trout swim throughout the upper Clark Fork, an indication of cleaner water. Bring a fishing rod.

The most effective way to see wildlife is to be quiet. Avoid hitting your paddle on the side of the canoe, a sound that carries far downstream. Whisper when paddling with companions. Better yet, don't talk at all and use hand signals if you see something worth telling others.

Early morning and late evening are the best times to view wildlife. In the morning, aim to be the first boat down the river. Once scared away from the banks, animals such as bears, elk, or moose may not return for hours that day, if at all.



For wildlife photography, I recommend a telephoto lens of at least 300mm or a 10x optical zoom. For close-ups of birds, you'll need twice that focal length. A waterproof case is essential for cameras when you're paddling. Make sure the case is clipped to a thwart or other secure part of your craft in case you tip.

You can't watch wildlife while drowning

Safety on the water is paramount. Learn the rating of any rapids on the river stretch you plan to float and run only those you know you can navigate. Understand, too, that the difficulty of a river varies tremendously with water flow. High, fast water creates much more dangerous conditions.

Low water is safer but has its own difficulties. Dragging your boat down miles of river you thought you could float is exhausting. And good luck seeing even a mallard when the sound of your boat bottom scraping rocks reverberates downstream for miles.

Guidebooks suggest minimum and maximum safe levels for most of Montana's frequently run rivers. These levels, listed as cubic feet per second (cfs) of water flow, are measured at various U.S. Geological Service (USGS) stations along rivers. Instantaneous readings for these stations are posted on the Internet (Google "Montana streamflow") and should be checked both the evening before and the morning of your planned float trip.

CLOCKWISE FROM TOP LEFT: ERIC HEIDLE; FRANCIS C. BERGQUIST; RICK SHERREMETA; DAVID R. ARMER; CRAIG & LIZ LARCOM; JOHN RUTH

IN FOR THE CLOSE-UP Wildlife are often long gone when you walk to a stream or river. But when you travel by boat, wildlife often won't be aware of your presence until—with smaller animals—you get to within just a few yards. Clockwise from top: An elk calf naps on a sandbar in the lower Flathead River; an American bittern feeds along the Yellowstone River; painted turtles watch a dragonfly along Logan Creek west of Whitefish.

Hypothermia from immersion in cold water is another hazard. Stay off water colder than 50 degrees F. unless you are wearing a drysuit, wetsuit, or similar safety gear. Wind, too, can be a challenge. Strong headwinds can greatly slow your progress, while crosswinds can drive you to the bank and even tip your canoe.

Of all the hazards on the water, fallen trees, known as strainers, are the most dangerous. Strainers can show up at any time on any river but are the greatest threat on small, forested rivers where a tree may block an entire channel. If you hit a strainer in even moderate current, your boat will flip and you can be caught underwater by branches and quickly drown. If you spot a strainer, paddle immediately to the opposite side of the river and portage around the obstruction.

Low-head (diversion) dams are another danger. Just below a dam is a backwater swirl, called a boil or hydraulic, that creates a powerful recycling water flow able to hold even strong swimmers underwater. Always portage around diversion dams.

WATCH WILDLIFE SAFELY Irrigation diversion dams are just one of the hazards on rivers that can drown unwary wildlife watchers.

For all these safety reasons and more, wear a life jacket when paddling Montana rivers, even in summer.

Plan your trip knowing how many miles you can reasonably paddle. An experienced canoeist can cover 20 miles a day in swift current, but most paddlers should plan on half that distance. Set out early on a calm summer morning and you will find yourself reinvigorated by the beauty of the land. Stop and take photos. Have a picnic or take a nap. And marvel at how close you can get to more species of wildlife than you ever thought possible in one day.

"Fall" Migration Beginning Soon

by Bruce Auchly

For waterfowl in Montana, fall migration might mean anything from green-winged teal moving through in late September, to snow geese stopping by in early November, to late-season mallards on the rivers in December, freshly arrived from Canada.

But for many shorebirds, "fall" migration has already begun, even though summer has barely started.

Shorebirds are small- to medium-sized birds with long, thin bills and legs. They typically feed along open shorelines and in wet grasslands. Biologists have recorded 41 species in Montana. Most shorebirds just pass through each spring, but a dozen or so species hang around long enough to reproduce.

The first to nest in Montana—in late March—are long-billed curlews (see article on page 28). Soon after their eggs hatch in May, the adults head back south, often leaving as early as late June. Not much later, other shorebird species begin their fall migration, peaking in about mid-August.

Most North American shorebirds nest in the tundra of the far north, from Alaska east to the shores of Hudson Bay. They usually winter around the Gulf of Mexico, from Florida to Mexico, or even along the Mexican west coast into South America. As they head to their wintering grounds—an odd name for places they reach each summer before Labor Day—they pass through Montana.

The males of most species are the first to migrate south. Females and the young follow later. For instance, the male lesser yellowlegs leaves the Arctic after breeding ends, reaching Montana around the end of June. The adult female lesser yellowlegs is next to leave, abandoning her young and arriving here around mid-July. Finally, the young birds, on their own, migrate south and reach Montana by the end of July. Somehow the young are able to continue, unaided, to the species' wintering grounds around the Gulf of Mexico. Remarkable.

When it comes to birders, some are casual, noting the arrivals and departures of easily recognized species like Bullock's orioles and yellow warblers. But those able to tell a Baird's sandpiper from a pectoral sandpiper go to Freezout Lake Wildlife Management Area (WMA) just for shorebirds.

One early August, for example, a report at Freezout of a single ruddy turnstone drew birders from Stevensville, Bozeman, and Kalispell.

The best viewing spot at Freezout, called the "Neck," is a narrow stretch of land between Pond 5 and the main lake. Stop at the WMA entrance kiosk and pick up a brochure showing a map and a list of birds observed at Freezout.

Another good place to see shorebirds this time of year is Warm Springs WMA, just off I-90 about 25 miles northwest of Butte. Montana's 21 national wildlife refuges also contain ponds and lakes that attract migrating shorebirds looking to refuel as they make their way south.

"The birds are looking for mudflats," says Steve Hoffman, executive director of Montana Audubon. "Too much water, and they can't wade. Too little and too dry, and they can't get their bills down to crustaceans and other aquatic foods." For viewing he recommends Harrison Lake (Willow Creek Reservoir), between Three Forks and Ennis, which often has a few big mudflats in late summer.

This gives you several prime locations for seeing shorebirds between now and the end of August. The only other advice I have is to look along the shoreline for birds with long bills. For any more detail than that, you'll need to consult your bird guide.

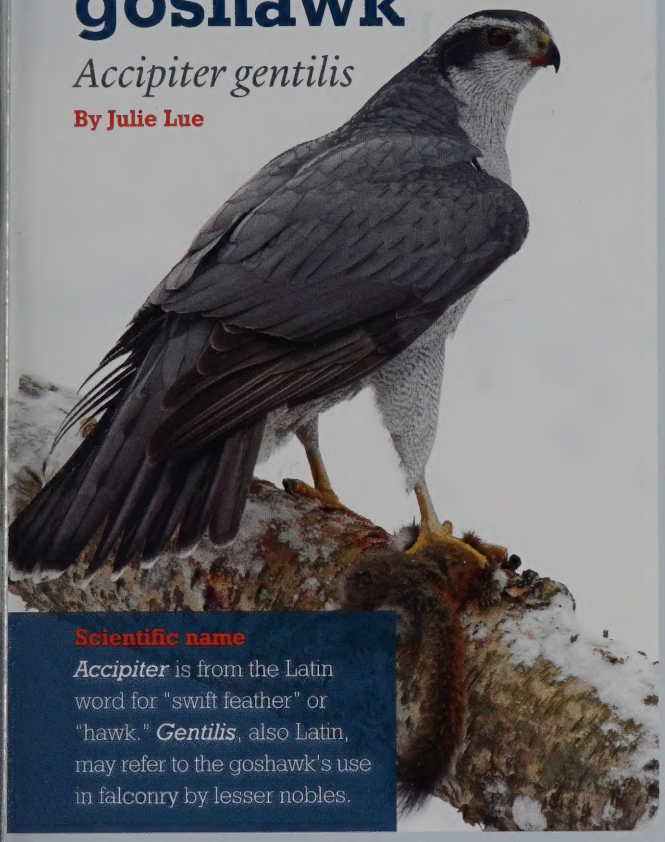
Bruce Auchly manages the FWP Regional Information and Education Program in Great Falls.

ILLUSTRATION BY E.R. JENNE

Northern goshawk

Accipiter gentilis

By Julie Lue



DONALD M. JONES

Scientific name

Accipiter is from the Latin word for "swift feather" or "hawk." ***Gentilis***, also Latin, may refer to the goshawk's use in falconry by lesser nobles.

My family and I were hiking a remote trail in the Bitterroot National Forest one summer day when a large hawk swooped past us and began to scold. Squawking relentlessly, it flew back and forth above our heads in a blur of feathers, clearly ready to take on four humans and a dog.

As we ducked and hurried up the switchbacks, the agitated bird landed on a fir tree and continued its rant. We were obviously unwelcome, having walked too close to the nest of a northern goshawk.

Identification

The northern goshawk is a big, heavy-bodied raptor with relatively short, broad wings, a pale underside, and a showy white ruffle of undertail feathers (called "coverts") plainly visible when it flies overhead. An adult is blue-gray on top with a slate-gray cap, bold white eyebrows, and bright red eyes that seem to glow. Underneath, it is light gray to white with delicate dark-gray barring and a long, heavily banded tail.

Immature goshawks have brown backs, light undersides that are heavily streaked with brown, less noticeable eyebrow stripes, and yellow eyes.

The northern goshawk is one of North America's largest hawks. "Gos" is an Old English word for "goose," referring to the raptor's ability to take down large waterfowl.

Voice

When humans or other intruders come too close to the nest, a parent will often sound a sharp, repetitive *kak-kak-kak-kak-kak* alarm. Females and juveniles also use a "wail-like" begging call to solicit food deliveries from the male during nesting.

Reproduction

Goshawks usually return to the same nesting area each year, but a pair may rotate among a handful of alternate nests. In Montana, goshawks begin nest building and egg laying from early April to late May. The female lays two to four eggs in a nest of sturdy twigs lined with greenery. While she incubates the eggs, the male hunts. After about a month, the eggs start to hatch, and five or six weeks later the well-feathered offspring fledge. By late summer, young goshawks are skillful fliers ready to strike out on their own.

Habitat

Northern goshawks live in dense woods throughout much of northern North America, Europe, and Asia. In Montana, they are found across the state except in the far northeast. For nesting, they prefer mature forests with plenty of big trees, a closed canopy of limbs overhead, and a fairly open understory where they can exercise their hunting skills.

U.S. Forest Service biologist Dave Lockman has studied roughly 100 goshawk nests in the Bitterroot National Forest. He finds the raptors primarily in mature stands of Douglas fir mixed with other tree species, usually on the northern and eastern sides of mid-elevation slopes, and often in some kind of bowl or depression near a small stream or pond. But goshawks also nest among ponderosa pines and on south-facing slopes. Elsewhere they have been found nesting in small- to medium-sized lodgepole pines.

In winter, these year-round residents move to lower elevations of Montana, where they hunt in open country near streams.

Hunting

Goshawks eat squirrels and snowshoe hares as well as birds such as jays, robins, woodpeckers, crows, and mountain grouse. To hunt, the goshawk perches quietly on a branch, waiting for a likely prospect to scurry, hop, or flitter through its field of view. Once the goshawk locates prey, it pursues fiercely by swerving through trees, smashing through brush, and even following on foot if necessary.

Aerial maneuvers

The goshawk impresses scientists (and terrifies prey) with its amazing ability to zip through dense forests. During its dizzying flight, the goshawk maneuvers its wings, tail, and legs to turn, dip, slow, accelerate, duck, and claw its way through small gaps among trunks and branches. The bird's aerial skills have attracted the attention of a research team from Harvard University and MIT, where biologists and roboticists are studying its flight in the hopes of designing faster, more efficient drones.

Conservation status

Surveying for nesting goshawks is "like finding a needle in a haystack in our mountain forests," says Jack Kirkley, goshawk research scientist and professor at the University of Montana–Western. As a result, it's hard to tell exactly how the species is faring in Montana. Some scientists and conservationists believe goshawks are vulnerable because of their preference for mature forests, which can be lost to timber harvest or overly hot wildfires. Others believe that the bird is doing fine here.

Julie Lue is a writer in Florence.

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PARTING SHOT

DINING IN THE DARK A long-billed curlew probes for snails and crustaceans in a shallow marsh at dusk. See page 10 to learn why these large shorebirds rely on wet and dry areas of intermountain grasslands for their survival. Photo by Ken Archer.

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